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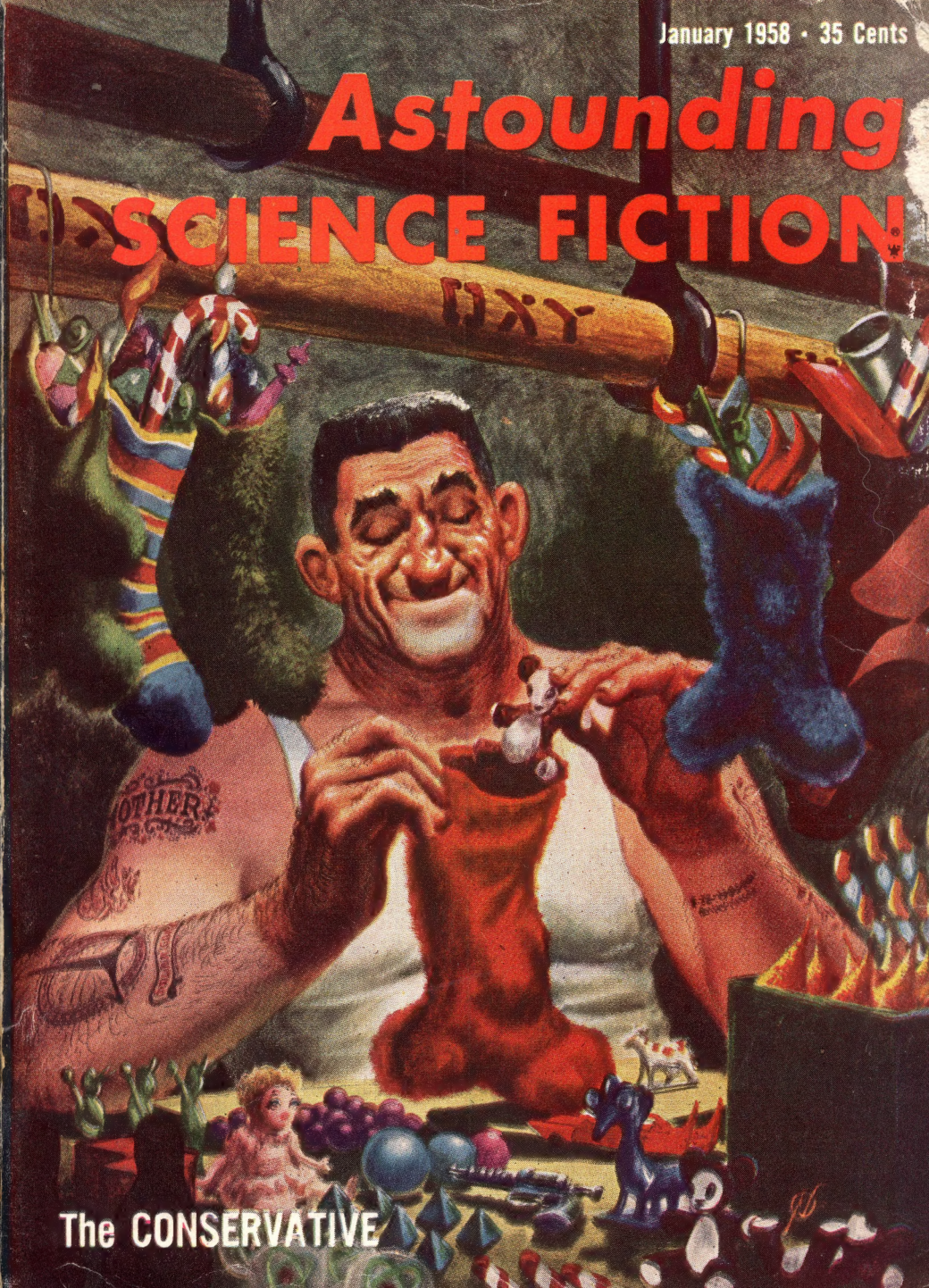

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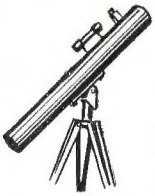

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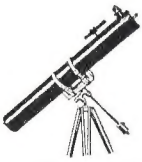

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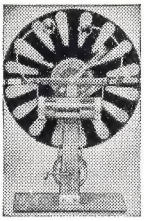

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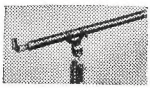

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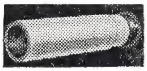

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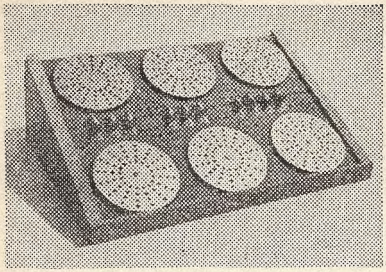

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VOLUME LX • NUMBER 5 **January 1958**

Short Novel

Unwillingly to School . . . . . *Pauline Ashwell* 8

Novelette

All the King's Horses . . . . . *Robert Randall* 84

Short Stories

Cease Fire . . . . . *Frank Herbert* 51

Short History of World War Three . . . . . *Murray Leinster* 69

Guppy . . . . . *Stanley Mullen* 120

Readers' Departments

The Editor's Page 5

In Times to Come 50

The Analytical Laboratory 83

The Reference Library . . . . . *P. Schuyler Miller* 139

Brass Tacks 152

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EDITORIAL

PROJECT ~~VANGUARD~~ ME TOO!

Well, we lost that race; Russian technology achieved an important milestone in human history—one that the United States tried for, talked about a lot, and didn't make. Various commentators have tried to gloss over the facts, ranging from efforts to demean the high accomplishment that Russians achieved, to pooh-pooh-ing the importance of getting there first. Saying "Sour grapes!" was recognized as an undesirable technique in Roman times.

One of the things Americans have long been proud of—and with sound reason—is our ability to convert theoretical science into practical, working engineering—into "hardware" as the rocket and missile men term it. This time we're faced with the uncomfortable realization that the Russians have beaten us in our own special field; they solved a problem of engineering technology faster and better than we did.

One reason it hurts, incidentally, is that we've been assured for some time that Russian technology is really pretty second rate. O.K., Bub; that makes United States technology pretty thoroughly third rate . . . because obviously the Russian technologists beat us.

Let's try a different tune; Russian technology is Grade A, First Class No. 1 stuff. They're good—they're every bit as good as the United States.

I've seen explanations that the Russians stole all our secrets, and that's how they did it. Let's not be stupid; they didn't steal the secret of that one from us—we haven't got it to be stolen. Any stealing being done, as of this writing—three days after the first announcement—would have to be done *from* Russia, not *by* Russia.

And it was a race, whether the beaten-out second-guessers choose to admit it or not. There can only be one first satellite, in all the history of Mankind; you know as well as I that we wanted it to carry "MADE

IN USA" on it. It didn't; let's have the grace to acknowledge we wanted it, tried for it, and were beaten out, and beaten out fairly and honestly by a well-organized, efficient, enthusiastic team of first-rate researchers.

If we hold a post-mortem on our defeated hopes for the purpose of proving that we didn't really hope, or that the hope was really pretty childish and unimportant, or that after all, ours will be a much more *scientific* satellite—that's "reparteé," which has been defined as "the remarks you think up on the way home from an argument you lost." That approach is, essentially, a defense of the way you tried to do it, and didn't succeed.

If Project Vanguard was not fouled up but merely delayed due to the belief that we had plenty of time to beat the Russians, the effect is more dangerous. Underestimation of the enemy is more stupid and less forgivable than confusion.

We didn't try hard enough, because we didn't really believe we had to try really hard. After all, no other nation could compete with the mighty power of American technology, could it . . . ?

Wrong guess, wasn't it?

Now let's try a post-mortem in terms of what's wrong with the United States methods of research. Sure they're good! They're terrifically effective, have produced history-making triumphs. They are, perhaps, just as good, or better, than they ever were.

But this is a relativistic Universe; if frame of reference A is moving forward, and frame of reference B is moving forward faster, A's running in reverse with respect to B.

We were four years ahead of Russia with the atomic bomb; about one year ahead with the H-bomb, about a month ahead with a flyable H-bomb—and the name "Project Vanguard" sounds a little foolish now, doesn't it?

One of the most interesting news items that's come to my attention was a relatively small item in the New York papers; one of my friends, who's been in rocket research, and well up in the business since the V2's started flying from White Sands, was fired for stating that the United States rocket research program had been fouled up, and hadn't done its job.

Interesting; Hitler began getting useless and false information from the battlefronts toward the end of the war, because he punished messengers who brought him bad news. The Japanese Navy didn't get accurate reports on damage suffered in battles with United States forces, because the men who reported the failures were punished. The philosophy —the attitude of mind—that leads to punishing a man for stating a painful truth is not one that leads to learning how to prevent repetitions of that type of failure.

Good Lord, can there be any question that the United States rocket program was most grievously fouled up? The United States *does* have

enormous technical resources; it *does* have highly creative engineering minds, and highly competent technicians. We do have immense industrial plants, and immense wealth. We've got exactly what it takes, and we've got it in immense supply.

And with all those advantages . . . we didn't make the grade. There's the old proposition that a good little man can never win against a good big man. The United States has more already-developed industrial power than Russia, as of 1957. Then, if the good little man wins . . . the big man isn't good. Of course it's a darned sight easier to slap down the messenger for mentioning the fact, than to work some of the fat off, and get back into condition.

Since 1945, the United States hasn't been feeling the pressure of real competition; before the war, Russia did not offer any real technological competition. It was easy to assume that *all* the Russian achievements were simply the result of the work of spies. Certainly they did use spies; what nation doesn't? For that matter, what industrial company doesn't do all it can to ferret out the tricky techniques of its competitors . . . here and abroad, too?

Instead of accepting that Russia was actually developing a first-class, and highly efficient technology of her own—it was easier to be self-congratulatory about it, and talk about Russian spies. The Russians got the atomic bomb? *Tsk-tsk!* All those Russian spies. The Russians had the hydrogen bomb, too? My, my! When *are* they going to stop those Russian spies!

O.K., spy-theorists! Those Russian spies must be *really* good; they stole a secret we didn't even have yet.

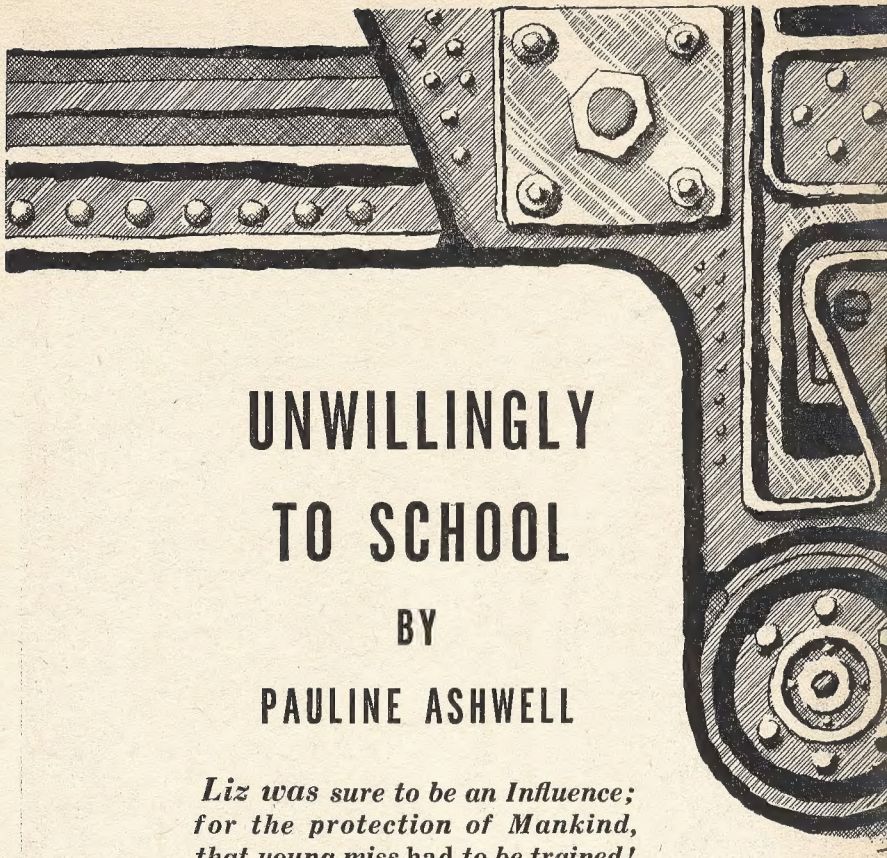
Personally, it is my feeling that the Russian triumph *can* be of the greatest benefit to the United States. There's nothing like a good, hard kick in the pants to wake up somebody who's going to sleep on the job—and the United States has been. The Army, Navy and Air Force have been squabbling with each other as to who does what in rocket research. After all, the only real competition as to *firsts* must be the other Armed Forces, because only Americans can really do things like this; everybody knows that.

One of the characteristics of such bickering is that each not only tries to advance its own program . . . *but tries to slow down the others.* Looks like all three Forces succeeded in their efforts.

It's been reported that more than a month before the Russian satellite first broke through into space, an Army Jupiter C rocket reached fifteen thousand miles per hour, and attained six hundred fifty miles altitude. It could have been used as the basis for a satellite with relatively minor additions and modifications, it's been pointed out.

Sure . . . but history doesn't pay off on "if's"; history, unlike science, has only one criterion: "Did it work?"

(*Continued on page* 158)



UNWILLINGLY TO SCHOOL

BY

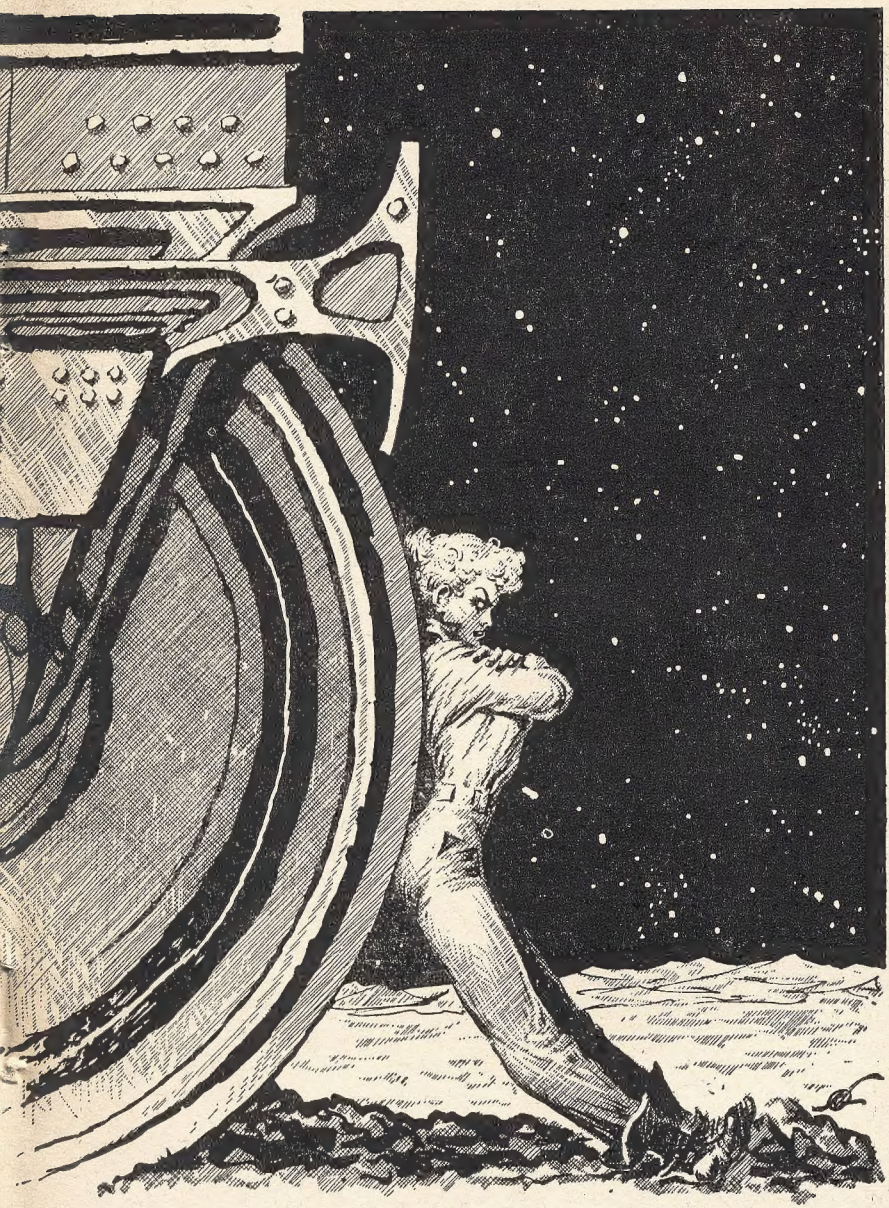
PAULINE ASHWELL

Liz was sure to be an Influence; for the protection of Mankind, that young miss* had *to be trained!

This may look like a movigram of Brownian Movement but no such luck; it is Russett Interplanetary College of Humanities Opening Day, four thousand three hundred twenty-seven other freshers milling around and me in the middle with a little ticket on my chest says Lee, L. because my given name is something not to mention; they say these kids came from one hundred twenty-four planets just to study at Russett but personally of all points in the known continuum this is the one I would rather be any place But.

Freshers come all sizes, all colors but a fair number are girls so there is one thing we will be finding in common anyway.

This may come as a surprise, that I am a girl, I mean. My tutor at Prelim School says my speech is



Illustrated by Freas

feminine as spoken but written down looks like the kind of male character who spits sideways.

I reply that I talk like my Dad he is a character all right, male too but does not spit, if you spent your formative years with a filter in your kisser neither would you.

He says my flair for seeing the functional significance of the minutiae of behavior is obviously what got me chosen for the Cultural Engineering course.

Huh.

I know what got me into that all right I am not so dumb as I look.

You think I flatter myself? Brother, by what goes on I look dumb indeed. Maybe this is because of my hair, curly and pale colored—all right, blond. My eyes are blue as they come which is by no means sky color whatever books say, my skin is pink some places white others when washed and a visitor we had once said I had a rosebud mouth.

I am seven then, I do not hold it against her right away there are no roses where I grew up; when I landed here on Earth I hunt one up to see was it a compliment.

Brother.

I find later they come other colors but this one is frostbite mauve, and the shape!

I wish to state here my mouth has two lips like anyone else.

Where I grew up is Excenus 23, how I got hauled off it is due to a string of catastrophes but the name of the biggest is D. J. M'Clare.

Excenus sun is what they call a swarmer, ninety-seven small planets in close orbits plus odd chunks too many to count, Twenty-three is the biggest, gravitation one point oh seven Earth diameter a fraction less, if you ever heard of the place it was because they mine areopagite there. Ninety-four per cent production for sale in the known volume of space comes from mines on Twenty-three; but for that no reason to live there at all.

My Dad started as a miner and made his pile, then he took up farming and spent the lot, he has it all back again now.

Areopagite forms only in drydust conditions meaning humidity at ground level never above two and one half per cent rainfall None, hence from this farming on Excenus is something special, but miners are like other people they have to eat too.

When Dad started there was him and Uncle Charlie and their first year they fed two thousand men, nowadays the planetary population is eleven thousand three hundred twenty and there are seven other farmers, most of them started working for Dad and graduated to farms of their own. Nobody on Excenus eats trucked concentrates now.

Uncle Charlie is Hon as in secretary meaning no real relation. He is an engineer, when Dad met him down on his luck but able and willing to build diggers, harvesters, weathermaker for ten thousand acres out of any junk to hand. Had to be

done like that because Excenus Haulage Company, the big company did all the shipping in and out of the planet, sold food concentrates. No competition welcome therefore no shipments seeds, agricultural, machinery, all that, would have been allowed through.

It takes Charlie two years to do his job, meanwhile Dad bones up the agricultural side. Nowadays there are a lot of books on drydust farming, they cover soilmaking, microbiology, economical use of weather, seed selection, plenty more; at that time there were fewer and Dad read them all.

If he had sent for the usual texts E. H. C. might have caught on and had a little accident in transit, so Dad gets them in as *books,* I mean antique style, chopped in pieces and hinged together down the side. They are labeled Curio Facsimiles and disguised with antique picture covers mostly show the damnedest females you ever saw, dressed in bits and pieces mostly crooked; some of them dead. People collect these things for some reason. Dad has one or two put on top with texts to match the outside, rest are textbooks on agriculture like I said.

Charlie offers to make reader-reels from them but Dad turns it down. He still has all those books packed in a row, when I was little he used to tell me how he learned all his farming studying that way, without using machines, it just showed you could still do it if you had to. Dad never had any education and it bothers him; I used to think that was why he kept on telling me this.

Well there are plenty of troubles not least with E. H. C. but Dad is not the type to give up; reason he started farming in the first place was he caught on E. H. C. were making it impossible for anyone to do just that; Dad does not like people who try and stop him even if it was not what he wanted in the first place.

I am born soon after the farm is really set, my mother walked out when I was three. She was fresh out of college with an agricultural degree when he met her, maybe the trouble was Dad caught on she knew less about drydust farming than he did, maybe other things. Excenus 23 is no place for a woman they say.

It is O.K. by me but I was born in the place.

Dad and Charlie raised me between them like the crops, this is to say carefully.

There are plenty more people now in Green Valley where the farms are, thirty or so and they change all the time. People who come out farm for a bit make their pile then go. We even get women some times. Peoples' wives from Town come out to board sometimes, Dad lets them because he thinks they will Mother me.

Well mostly I manage to steer them off and no hard feelings, it is my home after all they got to be reasonable about it if they want to stay. Seems they do as a rule, Town is kind of tough to live in. Several stayed a year or more. So it is not

true to say I grew up in a wholly masculine environment, I knew up to seven women for quite a while.

Green Valley is outside the mining area and about six hundred miles from Town. This has to be, Town gets most of its water combing the air and so do the weathermakers for the farms; anyway mining and farming do not mix so good. The Valley is twenty miles each way hedged by hill ridges up to seventy feet high. Outside is stone flats, dust bowl and tangle-mats of *Gordianus* scrub. Forty miles round about I know it pretty well but the rest of the planet is about the same, except for Town.

This is where I was born, I was all set to stay there till Dad had his accident, first catastrophe on the way to this place.

I am up one day in a helivan watching the harvest on a thousand-acre strip at the edge of the farm, there is a moderate wind blowing from over the hill, so we are keeping the weather-lid over each row until just before the harvester gets there so as to keep the dust out of the grain. I am directing this.

Here at the edge the weather-lid is just above the corn, it runs from the weather-maker in the middle of the farm in a big cone like a very flat tent, fifty feet high in the middle and four miles across. You cannot see it of course unless the wind blows dust across, or there is rain inside; the lid is just a layer of air polarized to keep dust one side, water vapor the other; just now you can see plainly where puffs of dust go skittering across.

The harvester gets to the end of a row on the far side from the road, I signal Biff Plater at Control and he draws the weather-lid in twenty yards. The harvester lifts its scanner at the end of the strip, wheels, and comes through the next swathe, with the big cutter pushing six inches above ground, stalks sliding back into the thrasher bagged corn following on the trailer behind.

Then I see Dad come along the road riding the biggest kor on the farm. Kors are *Pseudocamelopus hirsutinaris* part of the indigenous fauna we started taming to ride on about a year ago. Dad does not really enjoy it, he cannot get used to having no brakes but he will not give up. I see right away he is having trouble, the kor slipped its bridle and navigating on its own, long neck straight out and Dad slipping to and fro in the saddle; his mouth filter is bumped out and waving behind.

The harvester is half up the field. I do not want the kor to be scared I yell to Biff, Turn it off quick! but the controls are the other side of the shack from the weather ones.

Then the kor sees the scanner rearing on its stalk, it is not frightened at all thinks this is the great great grandfather of the species and charges straight across to say hello.

I am yelling to Biff and got my eyes shut, then he is yelling right back, I have to open them and look down.

The kor has gone straight into the

cutter the second before it stopped. Dad has been thrown and the harvester stopped with one tread a foot from his head and a corner gone over his arm.

I bring the heli down yelling for help on all frequencies.

Dad is breathing but flat out; fractured skull, ulna and radius like a jigsaw puzzle, multiple injuries to the chest; the kor is in three pieces mixed up with the machine.

We call the hospital in Town and they direct first aid over two-way visiphone while the ambulance comes. It takes seventy minutes and I am swearing to myself we will hire a permanent doctor if we have to shanghai him, after this.

The ambulance arrives and the doctor says we have done as well as can be expected, fortunately Dad is tough but it will be a two-month hospital job at the least.

They crate him up in splint plastic and load him into the ambulance. Buffalo Cole has packed me a bag, I get in too.

I am out again first thing, passengers not allowed.

I get out the long-distance heli and go straight to Town, I am waiting in the hospital when they arrive. I wait till they have Dad unpacked before I start to inquire.

These hospitals! It is all they will do to let me look at him, when I do he is lying in a kind of tank; his chest is the wrong shape, there is a mass of tubes round his head running to a pump, this is for resorption of blood clots in the brain; more too the other end for external aeration of the blood, he is not going to use his lungs for a bit.

I think this does not look real, Dad in all this plumbing; then I hear my breathing goes odd, next thing you know the doctors steer me outside.

They say it will be a week before the blood clots go and Dad wakes up but they will report by visiphone every day.

I say No need they can tell me when I visit each day.

They are deaf or something, they repeat they will call Green Valley each morning at thirteen o'clock.

I say Is that when they would prefer me to call in?

At last they have got it, they say Surely I will not fly six hundred miles every day?

I say No I shall be stopping right here in Town.

Then they want to know what friends I am stopping with, I say at a hotel of course.

Consternation all round No place for young girls to stop in this town, they make it out the toughest hellhole in the known volume.

I say Nuts there are hotels for transients and their wives too.

They flap wildly in all directions and offer me a bed in the nurses' hostel which is men only ordinarily but they will make an exception.

I say thanks very much, No.

In the end they tell me to go to the Royal Hotel it is the most respectable of the local dumps, do not on

any account make a mistake and go to the Royal Arms which is a pub in the toughest quarter of the town; they tell me how to go.

I put my luggage bag in my pocket; for some reason I have clutched it throughout; and I go.

Way I feel I do not go to the hotel straight off, I walk around a bit. I have been into Town of course shopping with Dad, maybe twice a year, but I do not seem to know it so well as I thought.

Then I find I have got to the Royal Arms or just near it anyway.

It is now late evening the sky is black except for stars, planets, and meteors crashing through every minute or two. The town is lit up but there are few in the streets, quiet folk are home in another quarter the rest still fueling up indoors. Way I feel is some toughery would suit me fine to take my mind off, because taming kors was my idea in the first place. Maybe I will get a chance to try out that judo trick I learned from Buffalo Cole.

So I slip through the noise-valve doors one after another and go into the pub.

Brother.

The noise trap is efficient all right, outdoors no more than a mutter so there is a real wallop inside. Every idea in my head is knocked clean out of it, even the thought I might go away. Among other things are three juke boxes in three corners going full blast and I cannot hear them at all.

Part of the decibels come from just conversation, part is encouragement to a three-way fight in the middle of the floor. I am still gaping when two of the parties gang up on the third and toss him all the way to the door. I dodge just in time, he rebounds off the inner valve and falls right at my feet.

Everyone turns and sees me, and the juke boxes all become audible at once.

I go down on my knees to see if the character I have just missed meeting is still breathing or not. His pulse is going all right but his face is a poor color wherever blood lets me see, I yell for water but competing with the juke boxes get nowhere. I am taking breath to try again when someone turns them off at the main, silence comes down like cotton-wool.

I ask for water in a whisper, someone brings it and tries to take me away.

I find I am clinging to the guy yelling He is hurt he is hurt! There is blood balling in little drops on my evercleans and smeared over my hands, I am trying to wipe it off with a disposable; not suited to this of course it crushes and goes away to dust and then the cotton wool feeling in my ears spreads elsewhere.

Then I am lying on my back with water running down my chin and a sensation of hush all round.

I try to sit up and something stops me. Someone murmurs soft nothings that fail to make sense.

I keep quiet till I have it sorted

and then I figure I have fainted clean away.

Me, Lizzie Lee.

I sit up and find I am on a couch in a sort of backroom and there are faces all round. Half of them seem knocked out of shape or with knobs on, bashed recently or previous.

The faces all jostle and I hear they are telling those behind She is sitting up! and the glad news getting passed along.

Someone pushes through the faces carrying a tray with food for six, I deduce they think I fainted from hunger or something.

I would put them right on this when I realize the feeling in my middle is because I last ate ten hours ago.

I weigh in and they appear pleased by this.

So I feel an explanation is owed and I tell them my Dad is in hospital with an accident, you would not think they could get so upset about a perfect stranger, sure this will not last but it is genuine feeling just now for all that.

There is more buzzing and a kind of rustle and I find they are taking up a collection.

I am horrified, I cry No, no, they are very kind but I truly cannot accept.

And they think this is proper pride or something, they start to mutter again and someone says Well then no need to worry, Knotty will give me a job as long as I need it, won't he? Knotty is in the crowd somewhere, seems he is keeper of this pub. His seems to agree and I figure out he'd better.

I do not see why they are so sure I am indigent until I happen to glance down. I am still in my work evercleans I was wearing when Dad got hurt; also it breaks on me suddenly this is the worst quarter of the town no girl would come here if she could afford to be elsewhere, even then not into the Royal Arms unless full of sweet innocence or something.

And I cannot speak.

When a bunch of strangers are mooning over your problems because you are a poor young thing you cannot tell them you walked in to look for a fight.

Truly, I could swear out loud.

In two shakes of a vibrator they have it fixed, Knotty will give me a job as long as I need one and I can have a room above the pub and at least fifty husky miners have sworn a personal guarantee no one within miles will lift a finger in any way I could not wish.

So what can I do?

I thank them and I walk out into the bar and when I get there I find the laws of human nature are not wholly suspended, there is a fight going on.

My bodyguard behind me gives a concerted roar and the fight stops and they look sheepish at me.

It is so clear they expect me to look shocked and sorrowful that I cannot help it, this is just what I do.

I ask the cause of the fight and they shuffle and the bigger one says

he is very sorry and would like to apologize Miss.

It turns out he has come in since I arrived and wishes to get drunk with the minimum delay, the assembled party tell him Damsel in destress back of the bar and he says to hell with that, she is probably faking it anyway; he sees this was error and regrets it very much.

And I have to make a production over forgiveness, he will never believe me unless I do.

So I am stuck.

You think all this will wear off in a day or too? Brother, so do I. At first, that is. But it does not. I have reformed the place overnight.

I begin to think getting drunk each night and working it off by fighting are not really their personal choice, all they need is a little stimulus to snap them out of it; such as the influence of a good woman maybe and looks like I am elected.

I get so busy listening to assorted troubles and soothing fights before they come to the boil, apart from any job Knotty can give me such as putting glasses in the washer and dishing the drinks, I hardly have time to think about Dad except at the hospital each day.

He is dead out for seven days just like they said, while the blood clots get loose from his brain; also they set his ribs and arm and tack up things inside. My miner friends all cheer me up they say This is a good hospital and tell me all the times they have been put together again themselves, I say Oh and Ah so often I am quite tired it seems to please them anyway.

Then Dad comes awake.

He does not do it while I am there of course, but I am allowed to sit with him two hours the day after, they have shifted him out of the tank into a proper bed, and taken the plumbing away. Towards the end while I am there he comes round and says Hello Liz how have you been?

And I want to cry but I am damned if I will, I say I am fine. And he is already asleep again.

I ring home like I do every day. Charlie is out so I leave a message, then I go back to the pub. I feel truly I could sing all the way, I do not notice until Knotty says so that I am singing anyway. Knotty is in a sour mood but when I tell him about Dad he fetches out half a smile and says will I be leaving then?

I say No Dad has another one month and twenty-one days in hospital to go.

At this his face falls under three gravities and he says All very well for me. I say why? can he not afford to pay me?

He says what troubles him is the pub. Since I came liquor drinking is down two fifths, if anybody starts to get drunk the rest stop him in case something occurs to sully my pure girlish mind, it becomes clear that to Knotty this sobriety is not pleasing at all.

Well it is far from being my wish either, at least I think that at first

then I think again Do I really want my pals back to the old routine drunk every night dead drunk Friday to Monday? This do-gooding is insidious stuff.

I go on thinking about it when I have time, this is not often because the boys are so pleased to hear Dad is better they allow each other to get quite lit, I have to head off one row after another.

I begin to think anyway this situation cannot last long, the pressure is building up visibly something is going to blow they need outlets for aggression and getting none just now. Also I must do something for Knotty. I could tell him Dad will pay back his losses but Knotty's head is solid bone; if I once got into it I am not a dear little down-and-out, he would let it out again at the diagrammatic wrong time.

Things have got to end but they have got to end tidy with no hard feelings, I shall need help for this.

I got out that night as soon as Knotty is in bed and get to a public visiphone. I dial home, never mind it is one in the morning I want Uncle Charlie.

What I get is Buffalo Cole looking sleepy, he lets out the yip he learned from an old stereo and asks where I am and where I have been so long and so loud I cannot tell him for quite a while.

Then he tells me Charlie is here in Town.

He has assumed I am staying at the Hospital. They phoned today as usual, he asked for me and found I was somewhere on my own; he busted into town straight off like a kor calf into a corn field and been hunting for me all over tearing out hair in bunches.

He is staying with a friend the far side of town, I ring.

Brother.

Now he has found me he has no wish to talk to me I am to stay in the visiphone booth and not move till called for well I suppose I can wiggle my ears if I like.

Charlie arrives in a heli four minutes later and mad enough to burn helium, he gives me the kind of character my pals sketch for each other when I am not supposed to be by.

He is not interested in excuses, he will get me out of whatever mess I am in for my father's sake; I will come to a bad end some day but I can have the grace to keep it till the old man is on his feet again.

I have learned something these last few days, I do not yell back. I say I have been very foolish and I need advice.

Do not think this fools him but he is taken aback slightly. I get something said before he recovers and in the end I tell the whole thing hardly interrupted at all.

At the end he gives me a peculiar look like when one of his hatcharia gave birth to a parrot and says nothing at all.

I say Look Charlie my idea is this; he says Liz your ideas are the start of this trouble in the first place, you

have been getting ideas ever since I knew them and every one worse than the one before, just let me think about this.

Then he says Well if you leave without explanations I suppose we will have these desperate characters hunting for you all over Town and if the truth gets out there will be a rumpus because of that, I guess you better go back there for tonight anyway, how are you going to get back in?

I say I have a key, does he think I crawled out of the window? From his look I rather gather he does, Men are children at heart.

All the same I go back quietly and sleep like a tombstone.

In the morning I see Charlie at the hospital and he says he has an

idea but seems he prefers to sit on it and see how will it hatch, I do not tell him what I think of this.

Then Dad wakes and says a few words and things look brighter and afterwards Charlie swears he has a real idea how I can get out of this without any hurt feelings, it just needs a bit more work on it.

I go back to the Arms thinking my troubles are half over, Brother what error, this is where they begin.

That evening I am chinning to some types who cut up yesterday, I tell them how shocked I am how surprised how sad because they have backslid, they are always sure I feel like this. If I do not say it they get upset because they suppose my feelings too deep for words; I can do this sort of thing no hands now.

Just the same it takes some concentration, when the stranger comes in I hardly notice him at all.

He is a tall chap in the usual evercleans with filter mask over his shoulder, all that is strange is I have not seen him before, men stick to their own pubs as a rule.

He slides into a corner and swaps words with the regulars and I forget him altogether.

The clock strikes twelve, two hours to midnight closing, enter a tall dark stranger.

Short hair and big shoulders and the face that launched the campaign for Great Outdoors Shampoo, maybe twenty-two years old, he takes a quick look round and I guess he does not think much of the place.

Well he should have seen it a week ago, now there is only one single juke box going and people are just chatting over drinks, not a fight in the place.

He comes up to the bar and taps someone on the shoulder to make way; try touching anyone a fortnight back and stand well clear! This time the fellow stops his fist before it goes six inches and then moves over an inch or two and I am face to face with the stranger over the gap.

He looks at me and registers more surprise than I thought his face could hold, I say What are you drinking sir?

He swallows hard and says Beer please; something is displeasing him like mad but I cannot see how it is me.

I give him his beer and he gives me an unloving look and moves away, he horns in on one of the gatherings and starts to chat.

I am busy but I keep an eye on him and it seems to me the chat is getting too emphatic for health, I beckon over a miner called Dogface and ask what goes on.

He says That character been annoying you Liz? I say No is he annoying anyone else? Dogface says he asks too damn many questions someone will paste him any minute now.

I sign for another miner called Swede, these two are the steadiest around; I say Ride herd on this character and keep him out of trouble.

They say How? I say get into conversation and stop him talking to anyone who is prone to get mad.

They look doubtful so I tell them to talk to him, he is asking questions well tell him answers, tell him about life on Excenus you can see he is a fresh-out Terrie, tell him about mining; that will be instructive for him.

Next time I look Dogface and Swede are one on each side of him talking away, the other types have all drifted off.

The stranger stays for an hour and they stick by him all the while, when he leaves no one has laid a finger on him, I have done a good deed this day. Dogface and Swede say they never knew they had so much to talk about, just the same the stranger did not look grateful to me.

Next day I go to the hospital as usual wondering if Charlie has hatched his idea.

Halfway there I feel eyes on the back of my neck. I look round and there he is again, the tall dark stranger I mean.

He strides up and says he wants to speak to me.

His tone is such that I think of Buffalo's judo trick but he looks the type to brush it off with a careless reflex, I could wish there were more people around.

I say What about?

He says I know damned well what about, this is poaching and he will not stand for it, he will complain to something I do not catch.

I say he must be thinking of somebody else.

He sizzles behind his teeth and says I need not think I can get out of it by playing innocent because he will be able to trace me perfectly well. I obviously come from that establishment for muddy minded morons Pananthropic Institute of Social Research; everybody knows Excenus is Russett's field-work place and no other school would crash it, let alone horning in on a practical that way.

Furthermore the dodge I am using was corny in the Ark or earlier.

I am much perplexed but more angry and ask what he is proposing to do?

He says Don't worry I will find out later, I guess he does not know either; but before I can say so he goes striding away.

I walk on getting madder as I go, this mystery on top of everything else is enough to drive me round the fourth dimension, and he will catch on to his mistake and I shall never hear it explained; however when I arrive I forget him because Dad is awake and fit for talking to.

Several times I wonder Shall I tell him the whole thing? but he is still sick, this is no time to tell him I am serving in a bar in the toughest part of the town.

We talk quietly about the farm and plans for next year and things we did when I was little, all of a sudden I want to cry.

Then Charlie comes. One visitor at a time I have to go, Charlie needs some instructions about the farm.

I think I will go out and walk around, I do not like waiting in the

hospital they think women belong some other place. I am halfway down the outside steps when there is a shadow over me and a voice says Excuse me, Miss Lee?

I turn and stare.

Brother what is this, are they making a stereo on Excenus, this is the handsomest man I ever came across. He makes the one this morning look like a credit for twenty all from one mold, I am certain I never saw him before.

He says We met last night though that was hardly an introduction, he is glad of an excuse to make my acquaintance now.

I think No this cannot be, yes it is, this is the gink I hardly noticed last night; same face same voice same hands and I never looked at him twice, how in Space is it done?

Brother, he called me Miss Lee!

I say there must be some mistake and turn towards the hospital again.

He says the hospital clerk told him my name and he saw me come out of the Royal Arms this morning.

Sing Hey for the life of a hunted fawn, now I am good and mad, just crazy. He says he thinks a talk would be mutually profitable, what I think is something quite different and I say it out loud. He has a way of doing things with his eyebrows to look amused, men have been killed for less.

He says What would the clientele of the Royal Arms think of that?

I say what the hell is that to him?

He says he will be delighted to explain if I will give him the opportunity but this is hardly a suitable place to talk.

There are no places suitable and I tell him so.

He says he has a helicar there, if I would care to drive it anywhere I like he will give me the key.

I begin to see what will happen if this specimen opens his face to Knotty and Co; I must know what his game is; I say O.K.

We are just getting into the heli when the air is sundered, Liz! here is Uncle Charlie and my reputation in pieces again.

He charges across and my companion says Mr. Blair? which is Charlie's name though I hardly remember, and he hands over a card with a name and some words on it.

Charlie reads it and looks baffled but not mad any longer.

I sneak a look at it, it says D. J. M'Clare and a string of initials, Russett Interplanetary College of Humanities, Earth, it has Department of Cultural Engineering in little letters lower down.

Charlie says Liz what in Space are you doing now?

M'Clare says he has to make Miss Lee a rather complicated apology, this being no place to do which he has suggested a ride, it will be much better if Mr. Blair will come along too.

I do not know how it is done but ten seconds later Charlie is inviting him for a drink to the house where he is staying and I am tagging along behind.

The house is close to the hospital and well to do all right the air is humidified right through. I choose lemonade to drink, I never cared for alcohol much and I am more tired of the smell; when Charlie has done bustling with drinks M'Clare begins.

He says he understands Miss Lee had an encounter this morning with his pupil Douglas Laydon.

I say Great whirling nebulae not the lunatic who called me a poacher? He says Very likely, Laydon came here to do a practical test and finding I had anticipated him was somewhat upset.

He explains that students in Cultural Engineering have a field work test after two years, this one had to make a survey of the principal factors leading to violence and try out short-term methods for abating same in a selected portion of the community on Excenus 23 namely the Royal Arms pub.

M'Clare says Excenus 23 is a very suitable spot for this kind of field work, the social problems stay constant but the population turns over so fast they are not likely to catch on.

Charlie nods to show he gets this, I get it too and start to be angry, not just mad but real angry inside, I say You mean that dumbbell came out here to push people around just for the exercise?

He says field work is an essential part of the course for a Cultural Engineering degree, I say Hell and hokum nobody has any right to interfere with people just for practice, he says Not everybody possesses your natural technique Miss Lee.

I say Look that is different, I was not trying to find out what makes people tick then fiddle with the springs and think I done something clever.

Charlie says Shut Up Liz.

This man does not believe me, well I did not start this on purpose but now I remember all the times I listened to someone tell me his troubles and thought What a good girl am I to listen to this poor sucker, how wise how clever how well I understand; I do not like thinking of this.

Then I find Charlie has started to tell M'Clare the whole thing.

I will say for Charlie he tells it pretty fair, he does understand why I cannot just let my pals find out I have fooled them, whatever he may have said; but why does he want to tell it to this character will not see it at all?

Then he says Well, Professor, if I understand what Cultural Engineering stands for this is a problem right in your line, I would very much welcome advice.

M'Clare says nothing and Charlie says it is a very minor matter of course, M'Clare says There he does not agree.

He says if these tough types caught on that their dear little down and out was really rich it would not stop at personal unpleasantness, the whole relation between the mining and

farming communities might well be upset.

I would like to sneer but cannot because it is perfectly true, Dad is pretty rich and has a big effect on local affairs; if the miners think his daughter been slumming around making fools of them no knowing what comes after.

M'Clare says However it should be easy enough to fix things so no one can catch on.

Charlie says it is not so simple, Liz has to be got away where no one will chase after her; fortunately very few people in Town are in a position to recognize her, but where can she go now.

I say Look that is easy give me a job on the farm.

Charlie says Suppose they take a fancy to visit you, you think Buffalo Cole is going to remember you are the hired help came there last Tuesday? That is the one place you can be certain sure someone will give you away.

Besides just as present they know your name but have not connected it with Farmer Lee. No, Liz we have to get you a job as companion or something to someone here in Town, a respectable woman the miners will keep right away from.

I say Charlie there are maybe three respectable women in Town; if you park me on one all my pals will come round to make sure I have not hired into a brothel by mistake. How will your lady friend care for that? Charlie says What worries him is where to find a woman anyone could believe had voluntarily saddled herself with a hellcat like me.

M'Clare makes a little cough and Charlie says What does he think?

M'Clare says our solutions are too prosaic and too partial, this is a classic example of the fauntleroy situation and should be worked out as such.

I say What the hell is a fauntleroy?

He says this means a situation in which one younger and apparently weaker person exerts influence over a group of adults by appealing to their protective instincts.

Appeal hell! he says Unintentionally, no doubt. He says the situation can only be properly resolved if the subject appears to be in no further need of protection against the trouble, whatever it may be; in this case financial.

Charlie says You mean we should tell them Liz has come into money and moved to a hotel?

M'Clare says that again would be only a partial solution, he thinks it would be better if Little Orphan Liz and her sick father were rescued by a Rich Uncle arriving next Wednesday from Earth.

Charlie says Why is Liz short of money if she has a rich uncle ready to assist? M'Clare says he is also a long-lost uncle only recently made his pile and just managed to trace the one remaining relative he has looked for ever since.

I say Why is this better than, he died and left me the cash? He says Money for nothing morally unsatis-

factory and a bad ending, this way you give something in return; also your lonely uncle can take you and your father straight off to Earth and leave nothing for anyone to ask questions about.

I do not believe anyone will swallow this hunk of cereal, too convenient all round.

According to M'Clare that does not matter, it is the right kind of improbable event for this situation. My pals will think it quite right and proper for their little ray of sunshine to be snatched up into unearned affluence and cheer the declining years of her rich relative and bring him together with his estranged brother-in-law; right ending to the situation Statistical probability irrelevant to the workings of Destiny.

Charlie says Where will we find an uncle? He himself is too well known, to hire an actor means going off the planet. M'Clare says as it happens he has to leave the planet this afternoon and will be returning next Wednesday himself.

Charlie says You mean you'd do it? That's really wonderful what do you say Liz? What I want to say is, I will not have this cultural corkscrew add himself to my family, but the lemonade tangles in my epiglottis; people have died that way but Do they care?

M'Clare says of course he must get Mr. Lee's permission for this masquerade, I just thought of that one now I am left with nothing to say except Hellanhokum I ought to be back at the bar.

I do not trust M'Clare one Angstrom I could see he was thinking of something else the whole time, probably What interesting opportunities for field work if the whole thing got given away; if Dad is really over his concussion he will put a stopper on the whole thing.

Does he hell!

Charlie takes M'Clare along, never mind visiting hours are over, they spill the whole thing to Dad before the professor catches his ship.

Well I will say they made a job of it. When I go along in the morning absolutely no bites in the furniture, Dad is still weakened of course.

He say Liz, girl, you are as crazy as a kor-calf, you got as much sense as a shorted servo, the moment I take my eye off you you stir up more trouble than a barrel of hootch on a dry planet. It is a long time since I was surprised at anything you do; here he goes off into ancient history not relevant to this affair.

This business, he says, has put the triple tungsten-plated tin top on it, even you must know what could have happened to you going into a place like that, Liz girl how could you do such a thing?

I say Dad I know it was crazy but you have it all wrong, miners may be tough but those types were real good to me.

He says Liz your capacity to fall on your feet is what scares me the worst of all, one of these days the probabilities will catch up with you

all in one go. Look at this Professor M'Clare probably the one man in the Universe would know how to get you out of this with no-one catching on, and he turns up here and now.

Well I was all set to get out myself with Charlie helping, but it seems to soothe Dad to think about M'Clare so I let him. That smoothy put himself over all right.

It develops where he has gone is Magnus 9 in the next system to let an examinee loose on some suckers there; he has left a list of instructions with Charlie, and Dad says I am to order myself according to these and not dare to breathe unless so directed.

They are all about what I am to do and say, Charlie stands over me while I learn them by heart, he does not seem to trust me but Hellanall does he think I want to fluff in the middle of a script like this?

Tuesday evening is when the scene starts, my pals ask What is on my mind they hope my old man is not worse is he?

I say I have had a message from a ship just coming within communicator distance and is landing tomorrow. I am to meet someone, whose name got scrambled, at the Space Gate at five thirty a.m.; I cannot think who this can be it worries me a little Dad has so many troubles already.

At this my pals look grim and say If it is debts I can count on them and if it is anything else I can still count on them, I feel ashamed again.

Five thirty is a horrible time to start. I am yawning and chilled through, the night breeze is still up and dust creeping in among the long pylon shadows in little puffed whirlwinds; the three ships on the field got their hatches down and goods stacked round and look broken and untidy.

First a little black dot in the sky then bigger and bigger covering more and more stars, it does not seems to come nearer but only to spread, then suddenly a great bulging thing with light modeling its under side and right over head, I want to duck.

It swings across a little to the nearest pylons. They jerk and the arms come up with a clang, reaching after the ship. There is a flash and bang as they make contact just under the gallery where it bulges, then a long slow glide as they fold and she comes down into place like a grasshopper folding its legs.

I find my breathing hitched up, I take a deep lungful of cold morning dust and start coughing.

My pals rally round and pat me on the back.

I thought there were only three present but there seem to be more, I cannot see the passengers get off until half are into the Gate, M'Clare is not in sight hell he did not see me perhaps he has ditched me.

The speaker system makes with a crack like splitting rocks and says Will Miss Lee believed to be somewhere around the Gate come to the manager's office at once please?

I take another deep breath more carefully.

My pals seem to think it is sinister, I now have seven on the premises and they wish to come too. In the end they elect Swede and Dogface bodyguards and the rest wait outside.

I cannot remember one single word I ought to say.

In the office is a man in uniform and another one not, I guess I look blank but not as blank as I feel the human face could hardly, how has he done it this time?

It was several seconds before I recognized him at all. He looks older and kind of worn you would guess he had a hardish life and certainly not cultured at all.

I say I was called for, my name is Lee.

He says slowly, Yes, he thinks he would have known me, I am very like my mother, and he calls me Elizabeth.

Every word is clean out of my head, fortunately my pals take over and wish to know how come?

M'Clare looks at them with a frown and says neither of them is James Lee, surely?

I say No they are friends of mine, does he mean he is my mother's brother because I thought he was dead?

This is not the right place for that the script is gone to the Coalsack already.

M'Clare says Yes he really is John M'Clare, he brings out papers to prove it. My friends give them the once over several times and seem to be satisfied, then they want to know sternly Why had he not helped us before?

M'Clare brings out letters from a tracing firm that cover two years and a bit, I will say he is a worker he has vamped all this stuff in three days with other things to do, I suppose Cultural Engineering calls for forgery once in a while.

My pals seem satisfied.

I say Why was he looking for us seeing he and Dad never got along? This is the script as originally laid down.

M'Clare alters the next bit ad lib and I don't take it in but it goes over with my pals all right, they tell him all about Dad's accident which they think happened prospecting, and about me and the bar; just then in comes M'Clare's acquaintance well to do in business locally meaning Uncle Charlie, apologizing for being late though M'Clare told him how late to be.

My pals shuffle and say Well Miss Lee you will not want us now.

I say what is this Miss Lee stuff you have been calling me Lizzie for weeks. I had to tell them my name or they will call me Bubbles or something.

M'Clare says he has a great deal to discuss with his niece and Dad, not to mention Charlie, but he wants to hear all about my doings and I will want to tell all my friends; maybe if he calls round to the Royal Arms in the evening they will be there?

They shuffle but seem gratified, they go.

Charlie sits down and the manager goes and Charlie says *Whew!* I sit down and do not say anything at all.

Well Knotty will be pleased to get rid of me that is one life brightened anyway.

I do not want another day like that one, six hours doing nothing in a hotel. I see Dad about five minutes, he uses up the rest of visitor's time with M'Clare or Charlie in and me out, then Charlie flies back home to get something or other and I want to go too, I want to go home! I will never come to this town again, I can't anyway until my pals have all left the planet. I wish all this lying were over.

Evening M'Clare and I go out to the bar.

Knotty has had a letter from me all about it and of course everyone knows, minute we get inside the door I see everybody is worked up and ready to fight at the drop of a hint, fauntleroy situation or not if they think my rich uncle is trying to snoot them all the trouble missed

during the last fortnight will occur at one go.

Then M'Clare spots Dogface and Swede at the back of the crowd and says Hello, five minutes later it is drinks all round and everything Jo-block smooth, I could not have done it better myself.

Then he is making a speech.

It is all about Kindness to dumb creatures meaning me, I do not listen but watch the faces, judging by them he is going good. I hear the last words, something about Now he has found his niece and her father he does not want to lose sight of them and his brother-in-law has consented the whole family goes back to Earth in two days' time.

It occurs to me suddenly How am I going to get off the ship? They have found some sick cuss wants to get to Earth and will play my Dad ten minutes to get a free passage, but my pals are bound to turn up to see me off how am I to slip away?

Then I stop thinking because Dogface says slowly So this is the end, hey Liz?

And someone else says Well it was good while it lasted.

And I cry, I put my head down on the table among the drinks and cry like hell, because I am deceitful and they are kind to me and I wish I could tell the truth for a change.

Someone pats me on the back and shoves a disposable into my hand, I think it is one of my pals till I smell it, nobody bought this on Excenus! I am so surprised I wad it up and it goes to dust so I have to stop crying right away.

I even manage to say Good-by and I will never forget them. They say they will never forget me.

We say about ten thousand good-byes and go.

Next day the hospital say Dad overtired, they have sedated him, seems he was half the night talking to M'Clare and Charlie what the hell were they thinking of to let him? My uncle will call for me. I expect Charlie what I get is M'Clare.

We are to go shopping buying some clothes for me to wear on Earth, it seems to me this is carrying realism too far but I do not want any more time in the hotel with nothing to do.

Fortunately the tailoring clerk does not know me, we have a machine out at the farm; he takes a matrix and slaps up about ten suits and dresses; they will be no use here at all, no place for condensers or canteen I cannot even give them away.

However I am not bothered so much about that, M'Clare is all the time trying to get me to talk, he says for instance Have I ever thought about going to College? I say Sure, I count my blessings now and then.

We are somehow on the subject of education and what teaching have I had so far? I say Usual machines and reels, I want to get off this so I start to talk about Excenus he cannot compete there. I tell him about our manners, customs, morals, finance, farming, geography, geology,

mining of areopagite, I am instructive right back to the hotel I hope now he has had enough of it.

In the evening they let me see Dad.

They say You really ought not to be allowed in he has had his quota of visitors today already, I say Who? but need I ask, it was Mr. M'Clare.

The nurse says I am allowed to see Dad because he refuses to go to sleep until he has told me something, but I must be careful not to argue it will retard his recovery if he gets excited again.

Dad is dead white and breathing noisy but full of spirit, the nurse says You may have five minutes and Dad says No-one is rationing his time for him when he is ready he will ring. The nurse is a sturdy six footer and Dad is five foot four, they glare it out. Dad wins in the end.

Well I intend to keep it down to five minutes myself, I say Hello Dad what cooks?

He says Lizzie girl what do you think of this M'Clare?

I think quite a number of things but I say He is very clever, I think.

Dad says Sure he is clever, Professor at a big college on Earth gets students from all the planets in the known volume, I been talking to him and he says you have a flair.

I say Huh?

Dad says I have a flair for this cultural engineering business, Professor M'Clare told him so.

I say Well I promised you already I will keep it under control in future.

Dad starts to go red and I say Look two minutes gone already, what did you want to tell me? say it straight, and he says Going to send you to college, girl.

I say What!

Dad says Liz, Excenus is no place for a young girl all her life. Time you seen some other worlds and I cannot leave the farm and got no one have an eye to you, now M'Clare says he will get you into this College and that is just what I need.

I say But—!

Dad says They got schools on Earth for kids like you, been on an outback planet or education restricted other ways, they are called Prelim Schools; well you got the Rudiments already; M'Clare says after three months Prelim you should be fit to get into Russett College of Humanities, he will act as your official guardian while on Earth. Do not argue with me Liz!

The nurse comes back and says I must go in thirty seconds not more, Dad is gray in the face and looks fit to come to pieces, I say All right Dad of course you know best.

He says Kiss me Lizzie, and good-by.

Then the nurse chases me Out.

This is M'Clare's doing playing on Dad when he is mixed in the head, he knows damned well this thing is impossible if he were only in his right mind. I go tearing back to the hotel to look for M'Clare.

I find he is out.

I sit there seething one hour

twenty-seven minutes until he comes in. I say I have to speak to him right now.

I do not know if he is looking bored or amused but it is an expression should be wiped off with rag, he says Certainly, can it wait till we reach his room?

We get there and I say Look what is this nonsense you have talked Dad into about taking me to some college on Earth or something? Because it is straight out crazy and if Dad were right in the head he would know.

M'Clare sits down and says, "Really, Lysistrata, what a spoiled young woman you are."

Who the hell told him, that name is the one thing I really do hold against Dad.

M'Clare goes on that he did not understand at first why my father refused to have me told about the scheme until it was all fixed, but he evidently knew the best way to avoid a lot of fuss.

I say I am not going to leave Excenus.

M'Clare says I cannot possibly avoid leaving Excenus I have got to go on the ship tomorrow haven't I?

I say they can send me back by lifeship, he says it is far too late to arrange that now.

I say then I will come back from the first stop on the way.

He says he is officially my guardian from the moment we leave the planet and he cannot allow me to travel alone, reason for all this rush is so he can see me to College himself, What is the matter with me don't I want to see the World anyway?

Sure, some time, but I don't have to go to College for that.

M'Clare says that is my mistake, Earth had such a rush of sight-seers from the Out Planets entrance not permitted any more except on business, only way I can get there is as a student except I might marry an Earthman some day, I say Hell I would rather go to College than that.

Just the same when I have had enough of it I am coming straight back home.

M'Clare says I will do no such thing.

Great whirling nebulae he cannot keep me on Earth if I want to go! he says On the contrary he has no power to do anything else, my father appointed him my guardian on condition I was to do a four-year course at Russett. Of course if I am determined to return to Excenus home and Dad rather than make the effort to adjust myself to an environment where I have not got everyone securely under my thumb there is an easy way out, I have to take a Prelim test in three months and if I fail to make it no power on Earth could get me into Russett, and he would have to send me back home.

We have to start early in the morning so Good night.

I go to my room, if there was anything I could bite holes in that is what I would do.

I will pass that exam if it takes twenty-eight hours a day, no this is to be on Earth well all the time that they have; I will get into M'Clare's

class and make him Sorry he interfered with me.

What does he think I am? Dad too, he would have sent me to school long ago except we both knew I would never make the grade.

I am next thing to illiterate, that's why.

Oh, I can read in a way, I can pick up one word after another as they come up in the machine, but I cannot use it right; Dad is the same.

Dad used to think it was because he learned to use it too late, then when I was old enough to learn he found I was the same, some kink in the genes I suppose. Both of us, we cannot read with the machine any faster than an old-style book.

I did not know this was wrong until I was eleven. Dad hid the booklet came with the machine then one day I found it, part of it says like this:

"It has sometimes been suggested that the reading rate should be used as a measure of general intelligence. This is fallacious. The rate at which information can be absorbed, and therefore the rate at which words move across the viewer, is broadly correlated with some aspects of intelligence, but not with all. Mathematicians of genius tend to read slower than the average, and so do some creative artists. All that can safely be said is that people of normal intelligence have reading rates somewhere above five thousand and that it is exceptional for anyone to pass the ten thousand mark: the few who do so are usually people of genius in a narrowly specialized field."

My reading rate is so low the dial does not show, I work out with a stop watch it is eight hundred or thereabouts.

I go and ask Dad; it is the first time he let me see him feeling bad, it is all he can do to talk about it at all, he keeps telling me it is not so bad really he got on all right and he cannot read properly any more than me; he shows me those old books of his all over again.

After this we do not talk about it and I do not want to talk about it now. Not to anyone at all.

That is the longest night I remember in my life, nineteen years of it.

In the morning we got to the Gate. My pals are there seeing me off, I do not cry because I have just found something makes me so mad I am just waiting to get in the ship and say what I think to M'Clare.

Then we go into the ship.

I cannot say anything now we have to strap in for takeoff. The feeling is like being in a swing stopped at the top of its beat. I cannot help waiting for it to come down, but after a bit I grasp we are up to stay and get unhitched.

In the corridor is a crewman, he says Hello miss not sick? I say Ought I to be?

He asks am I an old traveler? when I say First time up he makes

clicking noises to say I am clever or lucky or both.

We are getting acquainted when I feel eyes on my backbone and there is M'Clare.

M'Clare says Hello, Lizzie, not sick?

I say I do not have to pretend he is my uncle any more and I prefer to be called Miss Lee, I will not have a person like him calling me Lizzie or in fact anything else, as of now we are not speaking any more.

He raises an eyebrow and says Dear him. I start to go but he hooks a hand round my arm and says What is all this about?

I say I have been talking to that poor sucker come out of hospital and pretending to be my Dad. He is a heart case thinks he will be cured when he gets to Earth able to get around like anyone else, I know if he could be cured on Earth he could be cured on Excenus just as well, he will simply have to go on lying in bed and not even anyone he knows around, it is the dirtiest trick I ever knew.

Well he is not smiling now anyway.

He asks have I told the man he will not be cured, I say What does he take me for?

He says, I could answer that but I won't. You are quite right in thinking that it would do very little good to take a man with a diseased heart to Earth, but as it happens he will not be going there at all.

Close to Earth, M'Clare goes on, there is a body called the Moon with approximately one-eighth the gravitational pull, there is a big sanatorium on it for men like this one, the rare case not curable by operation or drugs: and if he cannot live a quite normal life he will at least be able to get out of bed and probably do some sort of job, this has been explained to him and he seems to think it good enough.

Sweet spirits of sawdust I have heard of that sanatorium before, why does the deck not open and swallow me up.

I say I am sorry, M'Clare says Why?

I say I am sorry I spoke without making sure of the facts.

I do not beg his pardon because I would not have it on a plate.

M'Clare says my uncle gave him a letter to deliver to me when the ship was under way, he shoves it in my hand and goes away.

It is written with Dad's styler, he fell on it during the accident and the L went wobbly, what it says is this.

Dear Liz,

About this College, I know you said I know best but did not mean it at all, just the same I reckon I do. You got to look at it another way. When they got the readers out at my old school and found I could not use them they reckoned I was no good for learning, but they were wrong. There is more to being educated than just books or you could sit and read them at home.

You and I are handicapped same way so we have to use our heads to get over it. All that is in books came out of somebody's head, well you and I just got to use our own instead of other people's. Of course there is facts but a lot of books use the same facts over and over, I found that when I started to study.

There is another thing for you, they told me at school I would never be any good for studying but I reckon I did all right.

It is high time you saw some other worlds than this one but I would not send you to College if I did not think you could get through. M'Clare says you have this Flair. We will look forward to seeing you four years from now, don't forget to write. Your loving father, J. X. Lee. P.S. I got a list of books you will want for Prelim School and Charlie had Information Store copy them, they are in your cabin. J. X. Lee.

Poor old Dad.

Well I suppose I better give it a try, and what's more I better get on with it.

The reels are in my cabin, a whole box of them it will take me a year to get through, the sooner the quicker I suppose.

I jam one in sit down in the machine put on the blinkers and turn the switch.

There is the usual warmup, the words slide on slow at first then quicker then the thing goes *click* and settles down, the lines glide across just fast enough to keep pace with my eyes. I have picked myself something on Terrestrial Biology and Evolution, I realize suddenly I will be among it in a couple of weeks, lions and elephants and kangaroos; well I cannot stop to think now I have to beat that exam.

Most of those weeks I study like a drain.

They have cut day-length in the ship to twenty-four hours already, I have difficulty sleeping at first but I adjust in the end. Between readings I mooch round and talk to the crew, I am careful not to be the little ray of sunshine but we get on all right. I go and see the man with the sick heart a few times, he wants to know all about the Moon so I read up and relay as well as I can.

It sounds dull to me but compared to lying in bed I can see it is high-voltage thrill.

He thanks me every day for the whole voyage, I keep saying we only did it because we wanted someone to impersonate Dad. I think there ought to be ways for people like him to get enough money to go to the Moon how can you earn it lying in bed? he agrees with this but does not get ideas very much, I think I will write about it to Dad.

We stop at the Moon to put him down but no time to look round, M'Clare had to be back at Russett day before yesterday, I suppose he lost time picking me up; well I did not ask him to.

Dropping to Earth I am allowed maybe half a second in the control-room to look at the screen, I say

What is all that white stuff? they say It is raining down there.

More than half of what I see is water and more coming down!

When the Earthbound ask what interests me most on Earth I say All that water and nothing to pay; they do not know what it means getting water out of near-dry air, condensing breath out of doors, humidity suit to save sweat on a long haul: first time on Earth I go for a walk I get thirsty and nearly panic, on Excenus that would mean canteen given out rush fast for the nearest house.

They told me it was raining; all the same when we walk out of the ship I think at first they are washing the field from up above, I stand there with my mouth open to see; fortunately M'Clare is not looking and I come to quite soon.

Seems all this water has drawbacks too, round here they have to carry rainproofing instead of canteens.

I spend three days seeing sights and never turn on a book.

Prelim school.

Worst is, I do not have a reader of my own now, only reading rooms and I have to keep it private that I read more than two hours a day or someone will catch on and I will be Out before I have a chance to try if what Dad says will work out.

There is more to teaching than books for one thing Class Debates, these are new to me of course but so they are to the others and these I can take. Man to man with my tutor at least I can make him laugh, he says The rugged unpunctuated simplicity of my style of writing is not suited to academic topics even when leavened with polysyllables end of quote, but it is all these books are getting me down.

In the end I get a system, I read the longest reel on each topic and then the other one the author doesn't like, that way I get both sides to the question.

Three months and the exam; afterwards I keep remembering all the things I should have said till I take a twenty-four hour pill and go to bed till the marking is over.

I wake up and comes a little blue ticket to say I am Through, please report to Russett College in three days for term to begin.

Well, what am I grinning about?

All this means is four years more of the same and M'Clare too added on.

I go for a walk in the rain to cool off but I keep on grinning just the same.

It comes to me as a notion I may not get through Russett term without telling M'Clare all about himself, so I get round and see as much of Earth as I can; more variety than at home.

So then three days are up and here I am in Russett entrance hall with more people than I ever saw in my life at one time.

There are these speaker mechs which are such a feature of Terrestrial life all round the room. One starts up in the usual muted roar like a spacer at a funeral, it says All

students for Cultural Engineering Year One gather round please.

This means me.

Cultural Engineering is not a big department, only fifty of us coagulated round this mech but like I said they come all kinds, there is one I see projecting above the throng so brunet he is nearly purple, not just the hair but all over. What is the matter with him he looks like the longest streak of sorrow I ever did see.

Well there are other ways to get pushed into this place than through basic urges thalamic or otherwise, just look at me.

The mech starts again and we are all hanging on what drops from its diaphragm, it says we are to File along corridor G to Room 31 alpha and there take the desk allotted by the monitor and no other.

This we do; even by Terrie standards it is a long hike for indoors.

I wonder what is a monitor, one of these mechs without which the Earthbound cannot tell which way is tomorrow? Then we are stopped and sounds of argument float back from ahead.

That settles it, Terries do not argue with mechs and I am conditioned already, it is a way to get no place at all: there is someone human dealing with the line.

We go forward in little jerks till I can hear, it is one of those Terrie voices always sound like they are done on purpose to me.

We come round the corner to a door and I can see, this Monitor is indeed human or at least so classified.

Here we go, it is only me this could happen to.

Each person says a name and the monitor repeats it to the kind of box he carries and this lights up with figures on it. I wonder why the box needs a human along and then I remember, one hundred twenty-four different planets and accents to match, I guess this is one point where Man can be a real help to Machine.

I am glad I saw him before he saw me: I tell him Lee, L. and he looks at me in a bored way and then does a double take and drops the thing.

I pick it up and say Lee, L. in cultivated tones, it lights up just the same, Q8 which means the desk where I have to sit.

The desks are in pairs. When I track Q8 to its lair Q7 is empty, I sit and wonder what the gremlins will send me by way of a partner.

I do not wait long. Here she comes, tall and dark and looks like she had brains right down her spinal column, she will have one of those done-on-purpose voices in which I will hear much good advice when the ice breaks in a month or so. Brother this is no place for me.

She looks straight past my shoulder and does not utter while she is sitting down.

I cannot see her badge which is on the other side. She has what looks to me like a genuine imitation korhide pouch and is taking styler and

block out of it, then she looks at me sideways and suddenly lights up all over with a grin like Uncle Charlie's, saying as follows, "Why, are you Lizzie Lee?"

I do not switch reactions fast enough, I hear my voice say coldly that my name is Lee, certainly.

She looks like she stubbed her toe. I realize suddenly she is just a kid, maybe a year younger than I am, and feeling shy. I say quick that I make people call me Lizzie because my real name is too awful to mention.

She lights up again and says So is hers, let us found a Society for the Prevention of Parents or something.

Her brooch says B Laydon, she says her first name will not even abbreviate so people here got to call her just B.

I am just round to wondering where she heard my name when she says That stuffed singlet in the doorway is of course her big brother Douglas and she has been wanting to meet me ever since.

Here Big Brother Douglas puts the box under his arm and fades gently away, the big doors behind the rostrum slide open as the clock turns to fourteen hours and Drums and Trumpets here comes Mr. M'Clare.

B Laydon whispers I think Professor M'Clare is wonderful do not you?

Brother.

I know M'Clare is going to deliver the Opening Address of the Year to Cultural Engineering students, it

is my guess all such come out of the same can so I take time off for some thought.

Mostly I am trying to decide what to do. Prelim School was tough enough, so this will be tough^2, is it worth going through just to show M'Clare I can do it?

Sure it is but can I?

I go on thinking on these lines, such as what Dad will say if I want to give it up; I just about decided all I can do is wait and see when suddenly it is Time up, clock shows 15.00 hours exactly just as the last word is spoken and Exit M'Clare.

Some thing I will say.

I look round and all the faces suggest I should maybe have listened after all.

B Laydon is wrapt like a parcel or something, then she catches me looking at her and wriggles slightly.

She says We have been allotted rooms together, sharing a study, do I mind it?

I assume this is because we come together in the alphabet and say Why should I?

She says Well. On the form it said Put down anyone you would like to room with and she wrote Miss Lee.

I ask did she do this because mine was the only name she knew or does she always do the opposite of what Big Brother Douglas tells her, she answers Both.

O.K. by me anyway.

Our rooms are halfway up the center tower, when we find them first thing I see is a little ticket in the delivery slot says Miss Lee call on Professor M'Clare at fifteen thirty please.

Guardian or no I have seen him not more than twice since landing which means not more than twice too often; still I go along ready to be polite.

He lets me sit opposite and looks thoughtful in a way I do not care for.

He says "Well, Miss Lee, you passed your qualifying exam."

I say Yes because this is true.

He says, it was a very economical performance exceeding the minimum level by two marks exactly.

Hells bells I did not know that, marks are not published, but I swallow hard and try to look as though I meant it that way.

M'Clare says the Admission Board are reluctant to take students who come so close to the borderline but they decided after some hesitation to accept me, as my Prelim Tutor considered that once I settled down as a student and made up my mind to do a little work I should get up to standard easily enough.

He says However from now on it is up to me, I will be examined on this term's work in twelve weeks' time and am expected to get at least ten per cent above pass level which cannot be done by neglecting most of the work set, from now on there are no textbooks to rely on.

He presents these facts for my consideration, Good afternoon.

I swagger out feeling lower than sea level.

It is no use feeling sore, I took a lot of trouble to hide the fact that I did a lot of work for that exam, but I feel sore just the same.

The thing I want to do most is get one hundred per cent marks in everything just to show him, I got a feeling this is just exactly how he meant me to react, because the more I think about it the more sure I am very few things happen by accident around M'Clare.

Take rooming, for instance.

I find very quickly that most people taking Cultural Engineering have not got the partners they put in for, this makes me wonder why B got what she wanted, meaning me.

Naturally the first thing I think of is she has been elected Good Influence, this makes me pretty cagey of course but after a day or two I see I must think again.

B always says she does not *look* for trouble. This may be true, she is very absent-minded and at first I get the idea she just gets into a scrape through having her mind on something else at the time, but later I find she has Principles and these are at the back of it.

First time I hear about these is three nights after Opening, there is a knock at my bedroom window at maybe three hours. I am not properly awake and do not think to question how somebody can be there, seeing it is five hundred feet up the tower; I open the window and B falls inside.

I am just about ready to conclude I must be dreaming when B unstraps a small antigrav pack, mountaineering type, and says Somebody offered her the beastly thing as a secondhand bargain, she has been trying it out and it doesn't work.

Of course an antigrav cannot fail altogether. If the space-warp section could break down they would not be used for building the way they are. What has gone wrong is the phase-tuning arrangement and the thing can be either right on or right off but nothing in between.

B says she stepped off the top of the tower maybe an hour ago and got stuck straight away. She stepped a little too hard and got out of reach of the tower parapet. She only picked that night for it because there was no wind, so she had no chance of being blown back again. She just had to turn the antigrav off, a snatch at a time, and drop little by little until the slope of the tower caught up with her. Then she went on turning it snap on and snap off and kind of slithering down the stonework until she got to about the right floor, and then she had to claw halfway round the building.

B says she was just going to tap at the window above mine and then she saw that frightful Neo-Pueblo statue Old Groucho is so proud of, then she came one farther down and found me but I certainly take plenty of waking.

Well I am wide awake now and I speak to her severely.

I say it is her career, her neck, neither of them mine, but she knows

as well as I do jumping off the tower is the one thing in this University is utterly forbidden and no Ifs.

B says That's just because some idiots tried to jump in a high wind and got blown into the stonework.

I say Be that as it may if she had waked up Old Groucho—Professor of Interpentration Mechanics ninety last week—she would have been expelled straight away, I add further she knows best if it would be worth it.

B says she is a practicing Pragmatist.

This turns out to mean she belongs to a bunch who say Rules are made mostly for conditions that exist only a little bit of the time, e.g. this one about the tower, B is quite right that is not dangerous except in a high wind—not if you have an antigrav I mean.

B says Pragmatists lead a Full Life because they have to make up their own minds when rules really apply and act accordingly, she says you do not lead a Full Life if you obey a lot of regulations when they are not necessary and it is a Principle of Pragmatism not to do this.

B says further it is because Terries go on and on obeying regulations unnecessarily that Outsiders think they are Sissy.

I say Huh?

B says it is not her fault she never had any proper adventures.

I remark If her idea of an adventure is to get hauled in front of the Dean why did she not go ahead and wake up Old Groucho instead of me?

B says the adventure part is just taking the risk, everybody ought to take some risks now and then and breaking rules is the only one available just now.

This causes me to gawp quite a bit, because Earth seems to me maybe fifteen times as dangerous as any planet I heard of so far.

There are risks on all planets, but mostly life is organized to avoid them. Like back home, the big risk is to get caught without water; there is only about one chance in one thousand for that to happen, but everybody wears humidity suits just the same.

On Earth you got a sample of about all the risks there are, mountains and deserts and floods and the sea and wild animals and poisons, now it occurs to me Terries could get rid of most of them if they really cared to try, but their idea of a nice vacation is to take as many as possible just for fun.

Well later on it occurs to me I should never have understood this about Terries but for talking to B, and I look round and find a lot of the Terries got paired up with Outsiders for roommates and maybe this is why.

I say to B some of what I think about risks and it cheers her up for a moment, but she goes on getting into trouble on Pragmatic Principles just the same.

Me, I am in trouble too but not on principle.

The work at first turned out not so bad as I expected, which is not to say it was good.

Each week we have a different Director of Studies and we study a different Topic, with lectures and stereos and visits to museums and of course we read Books.

Further we have what are called Class Debates, kind of an argument with only one person speaking at a time and the Director to referee.

Terries say this last is kid stuff, the Outsiders met it mostly in Prelim School if then so they really study hard so as to do it good. Next thing you know the Terries are outclassed and trying hard to catch up, so a strenuous time is had by all, I begin to see there is a real thing between the two groups though no one likes to mention it out loud.

Class Debates I do not mind, I been used to arguing with Dad all my life, what gets me is Essays. We do one each week to sum up, and all my sums come wrong.

Reason for this is we get about fifteen books to read every week and are not allowed more than three hours a day with a reading machine, this is plenty for most people but I only get through a quarter of the stuff.

If you only know a quarter of the relevant facts you get things cock-eyed and I can find no way round this.

My first essay comes back marked Some original ideas but more reference to actual examples needed, style wants polishing up.

The second has Original!! but what about the FACTS, style needs toning down.

More of the same.

After three weeks I am about ready to declare; then I find B gets assorted beefs written on her essays too and takes it for granted everybody does, she says Teachers always tell you what you do wrong not what you do right, this is Education.

I stick it some more.

I will say it is interesting all right. We are studying Influences on Cultural Trends, of which there are plenty some obvious some not.

Most of the class are looking forward to becoming Influences themselves, we have not been taught how to do this yet but everyone figures that comes next. It seems to me though that whatever you call it it comes down to pushing people around when they are not looking, and this is something I do not approve of more than halfway.

There is just one person in the class besides me does not seem to feel certain all is for the best. This is the dark fellow I noticed on Opening day, six foot six and built like a pencil. His name is Likofo Komom'baraze and he is a genuine African; they are rare at Russett because Africans look down on Applied studies, preferring everything Pure. Most of them study Mathematics and Literature and so on at their own universities or the Sorbonne or somewhere, seems he is the first ever to take Cultural Engineering and not so sure he likes it.

This is a bond between us and we become friendly in a kind of way, I find he is not so unhappy as he looks but Africans are proverbially melancholy according to B.

I say to Komo one time that I am worried about the exams, he looks astonished and says, But, Lizzie, you are so clever! turns out he thinks this because the things I say in class debates do not come out of any book he knows of, but it is encouraging just the same.

I need encouragement.

Seventh week of term the Director of Studies is M'Clare.

Maybe it makes not so much difference, but that week I do everything wrong. To start with I manage to put in twice the legitimate time reading for several days, I get through seven books and addle myself thoroughly. In Debates I cannot so much as open my mouth, I am thinking about that Essay all the time, I sit up nights writing it and then tear the stuff up. In the end I guess I just join up bits that I remember out of books and pass that in.

B thinks my behavior odd, but she has caught on now I do not regard M'Clare as the most wonderful thing that ever happened.

The last debate of the week comes after essays have been handed in, I try to pay attention but I am too tired. I notice Komo is trying to say something and stuttering quite a bit, but I do not take in what it is about.

Next day I run into Komo after breakfast and he says Lizzie why were you so silent all the week?

What we studied this time was various pieces of Terrie history where someone deliberately set out to shape things according to his own ideas, I begin to see why Komo is somewhat peeved with me.

Komo says, "Everybody concentrated on the practicability of the *modus operandi* employed, without considering the ethical aspects of the matter. I think it is at least debatable whether any individual has the right to try and determine the course of evolution of a society, most of the members of which are ignorant of his intentions. I hoped that the discussion would clear my mind, but nobody mentioned this side of it except me."

I know why Komo is worried about this, his old man who is a Tartar by all accounts has the idea he wants to re-establish a tribal society in Africa like they had five hundred years ago; this is why he send Komo to study at Russett and Komo is only half sold on the idea.

I say "Listen, Komo, this is only the first term and as far as I can see M'Clare is only warming up, we have not got to the real stuff at all yet. I think we shall be able to judge it better when we know more about it, also maybe some of the stuff later in the course might be real helpful if you have to argue with your Dad."

Komo slowly brightens and says "Yes, you are a wise girl, Lizzie Lee."

Here we meet B and some others

and conversation broadens, a minute later someone comes along with a little ticket saying Miss Lee see Professor M'Clare at 11.30 hours please.

Wise girl, huh?

Komo is still brooding on Ethics and the conversation has got on to Free Will, I listen a bit and then say, "Listen, folks, where did you hatch? you do what you can and what you can't you don't, what is not set by your genes is limited by your environment let alone we were not the first to think of pushing people around, where does the freedom come in?"

They gape and B says Oh but Lizzie, don't you remember what M'Clare said on Opening Day?

This remark I am tired of, it seems M'Clare put the whole course into that one hour so Why we go on studying I do not know.

I say No I did not listen and I am tired of hearing that sentence, did nobody write the lecture down?

B gasps and says there is a recording in the library.

It was quite a speech, I will say.

There is quite a bit about free will. M'Clare says Anyone who feels they have a right to fiddle with other people's lives has no business at Russett. But there is no such thing as absolute freedom, it is a contradiction in terms. Even when you do what you want, your wants are determined by your mental make up and previous experience. If you do nothing and want nothing, that is not freedom of will but freedom from will, no will at all.

But, he says, all the time we are making choices, some known and some not: the more you look the more you see this. Quote, "It has probably not occurred to you that there is an alternative to sitting here until the hour strikes, and yet the forces that prevent you from walking out are probably not insurmountable. I say 'Probably' because a cultural inhibition can be as absolute as a physical impossibility. Whatever we do means submitting to one set of forces and resisting others. Those of you who are listening are obeying the forces of courtesy, interest or the hope that I may say something useful in examinations, and resisting the forces that tend to draw your minds on to other things. Some of you may have made the opposite choice. The more we consider our doings the more choices we see, and the more we see the better hope we have of understanding human affairs."

Here there are examples how people often do not make the choice they would really prefer, they are got at for being sissy or something. Or social institutions get in the way even when everyone knows what should be done, Hard cases make bad law and Bad law makes hard cases too. M'Clare says also You are always free to resist your environment, but to do so limits all your choices afterwards, this comes to Make environments so they do not have to be resisted.

There is lots more but this bit has something to do with me, though you may not think so yet.

If I have any choices now, well I can throw my hand in or try to work something out; all I can think of is telling M'Clare how I cannot use a reading machine.

I am not so sure that is a choice, when he said Inhibitions can be absolute, Brother no fooling that is perfectly true.

Right now I can choose to sit here and do nothing or go and get some work done, there is a Balance of forces over that but then I go along to a Reading Room.

I have a long list of books I ought to have read, I just take the first, dial for it and fit it in the machine.

I think, Now I can choose to concentrate or I can let my mind go off on this mess I got into it and What Dad is going to say, no one in their senses would choose that last one. I set my chronoscope for twenty past eleven and put the blinkers on.

I switch the machine on, it lights and starts to go.

Then it goes crazy.

What should have warned me, there is no click. There is the usual warm up, slow then faster, but instead of a little jump and then ordinary speed it gets faster and faster and before I realize it I am caught.

It is like being stuck in concrete except this is inside me, in my head, and growing, it spreads and pushes, it is too big for my skull it is going to *burst*

and then I have let out a most almighty yell and torn out of the thing, I find later I left a bit of hair in the blinkers but I am out of it.

There is no one around, I run as though that machine had legs to come after me, I run right out in the campus and nearly crash with a tree, then I put my back to it and start breathing again.

Whatever I have done until now, judging by the feel of my ribs breathing was no part of it.

After a bit I sit down, I still have my back to the tree, I leave thinking till later and just sit.

Then I jump up and yell again.

I have left that crazy machine to itself, someone may sit in it this minute and get driven clean out of their head.

I run back not quite so fast as I came and burst in, someone just sitting down I yell out loud and yank him out of it.

It is a Third Year I do not know, from another class, he is much astonished by me.

I explain.

I guess I make it dramatic, he looks quite scared, meanwhile a small crowd has gathered around the door.

Along comes Doc Beschrievene expert at this kind of machine to see Why breach of the rule of silence in this block.

He trots straight in and starts inspecting the chair, then he says Exactly what happened, Miss Lee?

I say My God I have to see Mr. M'Clare!

I have been scratching my wrist for minutes, I now find the alarm of my chronoscope is trying to make itself felt, once again I am breaking records away from there.

I arrive one minute late but M'Clare has a visitor already so I can even get my breath, I also catch up on my apprehensions about this interview; seem to me the choice is get slung out as a slacker or get slung out as moron and I truly do not know which one I care for less.

Then the visitor goes and I stumble in.

M'Clare has a kind of unusual look, his eyes have gone flat and a little way back behind the lids, I do not get it at first then I suddenly see he is very tired.

However his voice is just as usual, not angry but maybe a little tired too, he says "Well, Miss Lee, they say actions speak louder than words and you certainly have given us a demonstration; you've made it quite clear that you could do the work but you aren't going to, and while it would be interesting to see if you could gauge the requirements of the examiners so exactly this time I don't think it would justify the time taken to mark your papers. What do you want to do? Go back to Excenus straight away or take a vacation first?"

I simply do not have anything to say, I feel I have been wrapped and sealed and stuck in the delivery hatch, he goes on, "It's a pity, I think. I thought when I first saw you there was a brain under that golden mop and it was a pity to let it go to waste. If only there were something that mattered more to you than the idea of being made to do what you don't want to—"

It is queer to watch someone get a call on a built-in phone, some do a sort of twitch some shut their eyes, M'Clare just lets the focus of his slide out through the wall and I might not be there any more, I wish I was not but I have to say something before I go away.

M'Clare has been using a throat mike but now he says out loud, "Yes, come over right away."

Now he is not tired any more.

He says "What happened to the reading machine, Miss Lee?"

I say "It went crazy." Then I see this is kid's talk, but I have no time to put learned words to it, I say "Look. You know how it starts? There is a sort of warm up and then a little click and it settles down to the right speed? Well it did not happen. What I think, the governor must have been off or something, but that is not all—it got quicker and quicker but it did something else—look I have not the right expression for it, but it felt like something opened my skull and pasting things on the convolutions inside."

He has a look of wild something, maybe surmise maybe just exasperation, then Doc Beschrievene comes in.

He says "Miss Lee, if it was a

joke, may we call it off? Readers are in short supply."

I say if I wanted to make a joke I would make it a funny one.

M'Clare says, "Ask Miss Lee to tell you what happens when you start the reader."

Beschrievene says, "I have started it! I connected it up and it worked quite normally."

Now the thing has gone into hiding, it will jump out on someone else like it did on me, I have no time to say this; M'Clare says "Tell Dr. Beschrievene about the reader."

I say "It started to go too fast and then—"

He says Start at the beginning and tell what I told before.

I say "When you sit in a reader there is normally an initial period during which the movement of the words becomes more rapid, then there is a short transitional period of confusion and then the thing clicks audibly and the movement of the words proceeds at a set rate, this time—"

Here Doc gives a yell just like me and jumps to his feet.

M'Clare says What was I reading in the machine?

I do not see what that has to do with it but I tell him, then he wants to know what I remember of it and where it stopped.

I would not have thought I remembered but I do, I know just where it had got to, he takes me backwards bit by bit—

Then I begin to catch on.

M'Clare says "What is your usual reading rate, Liz?"

I swallow hard, I say "Too low to show on the dial, I don't know."

He says "Is your father handicapped too?"

I lift my head again, I am going to say that is not his business, then I say Yes instead.

He says "And he feels badly about it? Yes, he would. And you never told anybody. Of course not!" I do not know if it is scorn or anger or what. Beschrievene is talking to himself in a language I do not know, M'Clare says Come along to the reading room.

The chair has its back off, M'Clare plugs in a little meter lying on the floor and says "Sit down, Liz."

There is nothing I want less than to sit in that chair, but I do.

M'Clare says, "Whether or not you have a repetition of your previous experience is entirely up to you. Switch on."

I am annoyed at his tone, I think I will give that switch a good bang, I feel I have done it too.

But the light does not go on.

M'Clare says patiently, "Turn on, please, Miss Lee."

I say "You do it."

Beschrievene says, "Wait! There is no need to demonstrate, after all. We know what happened."

Then M'Clare's fingers brush over mine and turn the switch.

I jump all over, the thing warms up and then click! there is the little jump and the words moving steadily through.

And you know, I am disappointed.

Beschrievene says He will be the son of a bigamist, I jump out of the chair and demand to know what goes?

M'Clare is looking at a dial in the meter, he turns and looks at me with exactly the same expression and says, "Would you like to repeat your previous experience?"

Beschrievene says, "No!"

I say, "Yes. I would."

M'Clare bends and does something inside the machine, then he says again, "Sit down, Lizzie Lee."

I do, I hit the switch myself too.

There it is again, words slide across slow and then quicker and quicker and there is something pressing on my brain, then there is a bang and it all goes off and Beschrievene is talking angry and foreign to M'Clare.

I climb out and say Will they kindly explain.

M'Clare tells me to come and look, it is the reading-rate dial of the machine it now says Seven thousand five hundred and three.

Beschrievene says How much do I know about the machine? seems to me the safest answer is Nothing at all.

He says, "There is an attachment which regulates the speed of movement of the words according to the reaction of the user. It sets itself automatically and registers on this dial here. But there is also another part of the machine far more im-

portant although there is no dial for it, unless you fit a test-meter as we have done: this is called the concentration unit or Crammer."

I did know that, it is what makes people able to read faster than with an old-style book.

He says, "This unit is compulsive. When the machines were first made it was thought that they might be misused to insert hypnotic commands into the minds of readers. It would be very difficult, but perhaps possible. Therefore in the design was incorporated a safety device." He pats one individual piece of spaghetti for me to admire.

He says, "This device automatically shuts off the machine when it encounters certain cortical wave-patterns which correspond to strong resistance, such as is called forth by hypnotically imposed orders; not merely the resistance of a wandering mind."

I say But—

He looks as though I suddenly started sprouting and says "M'Clare this is most strange, this very young girl to be so strong, and from childhood too! Looks are nothing, of course—"

M'Clare says "Exactly so. Do you understand, Miss Lee? One of your outstanding characteristics is a dislike of being what you call pushed around, in fact I believe if somebody tried to force you to carry out your dearest wish you would resist with all your might, you are not so set on free will as you are on free won't. The Crammer appeared to your subconscious as something that interfered with your personal freedom, so you resisted it. That isn't uncommon, at first, but not many people resist hard enough to turn the thing off."

I say "But it worked!"

Beschrievene says that the safety device only turns off the Crammer, the rest of the machine goes on working but only at the rate for unassisted reading about one tenth normal rate.

M'Clare says, "You, my girl, have been trying to keep up with a course designed for people who could absorb information seven or eight times as fast. No wonder your knowledge seemed a bit sketchy."

He sounds angry.

Well hells bells I am angry myself, if only I had told somebody it could all have been put right at the start, or if only the man who first tried to teach Dad the reader had known what was wrong with the way he used it, Dad would have had ordinary schooling and maybe not gone into prospecting but something else, and—

Then whoever got born it would not have been me, so where does that get you?

Beschrievene is saying, "What I do not understand, why did she suddenly stop resisting the machine?"

M'Clare says Well Liz?

It is a little time before I see the answer to that, then I say "We cannot resist everything we can only choose the forces to which we will submit."

They look blank, M'Clare says Is it a quotation?

I say "Your speech on Opening Day, I did not listen. I heard it just now."

This I never thought to see, his classical puss goes red all over and he does not know what to say.

Beschrievene wants to know more of what was said so I recite, at the end he says "Words! Your students frighten me, M'Clare. So much power in words, at the right time, and you are training them to use such tools so young! To use them perhaps on a whole planet!"

M'Clare says "Would you rather leave it to chance? Or to people with good intentions and no training at all? Or to professional ax-grinders and amateurs on the make?"

I say How do I stop doing it?

Beschrievene rubs his chin and says I will have to start slowly, the machine produced so much effect because it was going fast, normally children learn to read at five when their reading rate is low even with the Crammer. He says he will take out the safety but put in something to limit speed and I can have a short session tomorrow.

I say Exams in four weeks three days why not today?

He laughs and says Of course I will be excused the exam—

M'Clare says Certainly I will take the exam, there is no reason why I should not pull up to pass standard; work is not heavy this term.

Beschrievene looks under his eyebrows but says Very well,

After lunch I sit down in the doctored machine.

Five minutes later I am sick.

Beschrievene fusses and gives me anti-nauseant and makes me lie down one half hour then I start again.

I last twenty minutes and come out head aching fit to grind a hole, I say For all sakes run it full speed it is this push and drag together turns me up, this morning it only scared me.

He does not want to do this, I try all out to persuade him, I am getting set to weep tears when he says Very well, he is no longer surprised my will was strong enough to turn off the machine.

This time it comes full on.

The words slide across my eyes slow, then quicker, then suddenly they are running like water pouring through my eyes to my brain, something has hold of me keeping my mind open so that they can get in, if I struggle if I stop one microsecond from absolute concentration they will jam and something will *break*.

I could not pull any of my mind away to think with but there is a little corner of it free, watching my body, it makes my breath go on, digs my nails in my hand, stops the muscles of my legs when they try to jerk me out of the chair, sets others to push me back again.

I can hear my breath panting and the bang of my heart, then I do not hear it any longer, I am not separate any longer from the knowledge coming into me from the machine.

and then it stops.

It is like waking with a light on the face, I gasp and leap in the seat and the blinkers pull my hair, I yell What did you do that for?

M'Clare is standing in front of me, he says Eighty-seven minutes is quite sufficient come out of that at once.

I try to stand and my knees won't unhinge, to hear M'Clare you would think it was his legs I got cramp in, I suppose I went to sleep in the middle of his remarks anyway I wake tomorrow in bed.

In the morning I tell it all to B because she is a friend of mind and it is instructive anyway.

B says Lizzie it must have been awful but it is rather wonderful too; I do not see this I say Well it is nice it is over.

Which it is not.

Four weeks look a long time from the front end but not when it is over and I have to take the exam.

I have made up my mind on one thing, if I do not pass I am not asking anyone to make allowances I am just straight off going home, I am too tired to think much about it but that is what I will do.

Exam, I look at all the busy interested faces and the stylers clicking along and at the end I am certain for sure I failed it by quite a way.

I do not join any post-mortem groups I get to my room and lock the door and think for a bit.

I think That finishes it, no more strain and grind and Terrie voices and Please Tune In Daily For Routine Announcements and smells you get in some of this air, no more high-minded kids who don't know dead sure from however, no more essays and No More M'Clare, I wish they would hurry up and get the marks over so I can get organized to count my blessings properly.

However sixty four-hour papers take time to read even with a Crammer and M'Clare does them all himself, we shall get the marks day after tomorrow if then.

There is a buzz from the speaker in the study and B is not there, I have to go.

Of all people who should be too busy to call me just now it is Mr. M'Clare.

He says I have not notified him of my vacation plans yet.

I say Huh?

He says as my guardian he ought to know where I am to be found and he wants to be sure I have got return schedules fixed from wherever I am going to so as to make certain I get back in time for next term.

I say Hell what makes you think I am coming back next term anyway.

He says Certainly I am coming back next term, if I am referring to the exam he has just had a look at my paper it is adequate though not outstanding no doubt I will do better with time. Will I let his secretary have details of my plans, and he turns it off on me.

I sit down on the floor, no chair to hand.

Well for one thing the bit about the vacations was not even meant to deceive, he did it just to let me know I was Through.

So I have not finished here after all.

The more I think about studying Cultural Engineering the more doubtful I get, it is pushing people around however you like to put it more fancy than that.

The more I think about Terries the more I wonder they survived so long, some are all right such as B but even she would not be so safe in most places I know.

The more I think—

Well who am I fooling after all?

The plain fact is I am not leaving Russett and all the rest of it and I am so pleased with this, just now I do not care if the whole College calls me Lysistrata.

THE END

IN TIMES TO COME

Poul Anderson is, as his stories may have indicated, very much interested in anthropology and the history of human societies. The actual physical nature of Man imposes certain limitations on the organization of the societies he develops, which, in turn, tend to impose pressures on his physical nature. (The development of cities imposes a greatly increased need for resistance to communicable diseases, for example. A hunting society demands agility, an agrarian system needs muscle, but less agility.)

Beginning next issue, Poul has some fun with a really wild cross-up of physical and socially incongruent cultures. On a large, low-density planet, there could be an Earth-like surface gravity, and an atmosphere so deep as to give a much denser atmosphere—one deep enough and dense enough for winged manlike intelligences. The sort of society that such people would develop might be a little difficult for three shipwrecked humans to fit into . . . .particularly when, due to differences of protein chemistry, not one bite of the alien food is tolerable!

Under such circumstances . . . what type of man is "The Man Who Counts?"

Poul's answer may irritate, please, amuse, or arouse-to-argument—but the novel he works out makes wonderful fun!

THE EDITOR.

CEASE FIRE

You can sometimes end the power of a method—but that does not affect the end.

BY FRANK HERBERT

Illustrated by Freas

Snow slanted across the frozen marshland, driven in fitful gusts. It drifted in a low mound against the wooden Observation Post. The antennae of the Life Detector atop the OP swept back and forth in a rhythmic half-circle like so many frozen sticks brittle with rime ice.

The snow hid all distance, distorted substance into gray shadows without definition. A suggestion of brightness to the north indicated the sun that hung low on the horizon even at midnight in this season.

Out of possible choices of a place for a world-shattering invention to be born, this did not appear in the running.

A rifle bullet spanged against an abandoned tank northeast of the OP, moaned away into the distance. The bullet only emphasized the loneliness, the isolation of the OP set far out ahead of the front lines on the Arctic battlefields of 1972. Behind the post to the south stretched the long reaches of the Canadian barren lands. An arm of the Arctic Ocean below Banks Island lay hidden in the early snow storm to the north.

One operator—drugged to shivering wakefulness—stood watch in the OP. The space around him was barely six feet in diameter, crammed with equipment, gridded screens glowing a pale green with spots that indicated living flesh: a covey of ptarmigan, a possible Arctic fox. Every grid point on the screens held an aiming code for mortar fire.

This site was designated *OP 114* by the Allied command. It was no place for the sensitive man who had found himself pushed, shunted and shamed into this position of terror. The fact that he did occupy OP 114 only testified to the terrible urgencies that governed this war.

Again a rifle bullet probed the abandoned tank. Corporal Larry Hulser—crouched over the OP's screens—tried to get a track on the bullet. It had seemed to come from the life-glow spot he had identified as probably an Arctic fox.

Much too small for a human, he thought. *Or is it?*

The green glow of the screens underlighted Hulser's dark face, swept shadows upward where they merged with his black hair. He chewed his lip, his eyes darting nervously with the fear he could never hide, the fear that made him the butt of every joke back at the barracks.

Hulser did not look like a man who could completely transform his society. He looked merely like an indefinite lump of humanity encased in a Life Detector shield, crouching in weird green shadows.

In the distant days of his youth, one of Hulser's chemistry professors had labeled him during a faculty tea: *"A mystic—sure to fail in the modern world."*

The glow spot Hulser had identified as a fox shifted its position.

Should I call out the artillery? Hulser wondered. *No. This could be the one they'd choose to investigate with a flying detector. And if the pilot identified the glow as a*

fox— Hulser cringed with the memory of the hazing he had taken on the wolf he'd reported two months earlier.

"Wolfie Hulser!"

I'm too old for this game, he thought. *Thirty-eight is too old. If there were only some way to end—*

Another rifle bullet spanged against the shattered tank. Hulser tried to crouch lower in the tiny wooden OP. The bullets were like questing fingers reaching out for unrecognized metal—to identify an OP. When the bullets found their mark, a single 200 mm. mortar shell followed, pinpointed by echophones. Or it could be as it had been with Breck Wingate, another observer.

Hulser shivered at the memory.

They had found Wingate slumped forward across his instruments, a neat hole through his chest from side to side just below the armpits. Wind had whistled through the wall of the OP from a single bullet hole beside Wingate. The enemy had found him and never known.

Hulser glanced up nervously at the plywood walls: all that shielded him from the searching bullets—a wood shell designed to absorb the metal seekers and send back the sound of a bullet hitting a snowdrift. A rolled wad of plot paper filled a bullet hole made on some other watch near the top of the dome.

Again Hulser shivered.

And again a bullet spanged against the broken tank. Then the ground rumbled and shook as a mortar shell zeroed the tank.

Discouraging us from using it as an OP, thought Hulser.

He punched the *backtrack* relay to give the mortar's position to his own artillery, but without much hope. The enemy was beginning to use the new "shift" shells that confused *backtrack.*

The phone beside his L-D screens glowed red. Hulser leaned into the cone of silence, answered: "OP 114. Hulser."

The voice was Sergeant Chamberlain's. "What was that mortar shooting at, Wolfie?"

Hulser gritted his teeth, explained about the tank.

Chamberlain's voice barked through the phone: "We shouldn't have to call for an explanation of these things! Are you sure you're awake and alert?"

"Yeah, Sarg."

"O.K. Keep your eyes open, Wolfie!"

The red glow of the phone died.

Hulser trembled with rage. *Wolfie!*

He thought of Sergeant Mike Chamberlain: tall, overbearing, the irritating nasal twang in his voice. And he thought of what he'd like to do to Chamberlain's narrow, small-eyed face and its big nose. He considered calling back and asking for "Schnozzle" Chamberlain.

Hulser grinned tightly. *That'd get him! And he'd have to wait*

another four hours before he could do anything about it.

But the thought of the certain consequences in arousing Chamberlain's anger wiped the grin from Hulser's face.

Something moved on his central screen. The fox. Or was it a fox? It moved across the frozen terrain toward the shattered tank, stopped halfway.

A fox investigating the strange odors of cordite and burned gas? he wondered. *Or is it the enemy?*

With this thought came near panic. If any living flesh above a certain minimum size—roughly fifty kilos—moved too close to an OP without the proper IFF, the hut and all in it exploded in a blinding flash of thermite: everything incinerated to prevent the enemy from capturing the observer's Life Detector shield.

Hulser studied the grid of his central screen. It reminded him of a game he'd played as a boy: two children across a room from one another, ruled graph paper hidden behind books in their laps. Each player's paper contained secretly marked squares: four in a row—a battleship, three in a row—a destroyer, two in a . . .

Again the glow on his screen moved toward the tank crater.

He stared at the grid intersection above the glowing spot, and far away in his mind a thought giggled at him: *Call and tell 'em you have a battleship on your screen at 0-6-C. That'd get you a Section Eight right out of this man's army!*

Out of the army!

His thoughts swerved abruptly to New Oakland, to Carol Jean. *To think of her having our baby back there and—*

Again the (fox?) moved toward the tank crater.

But his mind was hopelessly caught now in New Oakland. He thought of all the lonely years before Carol: to work five days a week at Planetary Chemicals . . . the library and endless pages of books (and another channel of his mind commented: *You scattered your interests too widely!*) . . . the tiny cubbyhole rooms of his apartment . . . the tasteless—

Now, the (fox?) darted up to the tank crater, skirted it.

Hulser's mind noted the movement, went right on with its reverie: *Then Carol! Why couldn't we have found each other sooner? Just one month together and—*

Another small glowing object came on the screen near the point where he'd seen the first one. It, too, darted toward the tank crater.

Hulser was back in the chill present, a deadly suspicion gnawing at him: *The enemy has a new type of shield, not as good as ours. It merely reduces image size!*

Or is it a pair of foxes?

Indecision tore at him.

They could have a new shield, he thought. *We don't have a corner on the scientific brains.*

And a piece of his mind wandered off in a new direction—the war

within the war: the struggle for equipment superiority. A new weapon—a new shield—a better weapon—a better shield. It was like a terrible ladder dripping with maimed flesh.

They could have a new shield, his mind repeated.

And another corner of his mind began to think about the shields—the complex flicker-lattice that made human flesh transparent to—

Abruptly, he froze. In all clarity, every diagram in place, every equation, every formula complete—all spread out in his mind was the instrument he knew could end this war. Uncontrolled shivering took over his body. He swallowed in a dry throat.

His gaze stayed on the screen before him. The two glow spots joined, moved into the tank crater. Hulser bent into the cone of silence at his phone. "This is OP 114. I have two greenies at co-ordinates 0-6-C-sub T-R. I think they're setting up an OP!"

"Are you sure?" It was Chamberlain's nasal twang.

"Of course I'm sure!"

"We'll see."

The phone went dead.

Hulser straightened, wet his lips with his tongue. *Will they send a plane for a sky look? They don't really trust me.*

A rending explosion at the tank crater answered him.

Immediately, a rattle of small arms fire sprang up from the enemy lines. Bullets quested through the gray snow.

It was an enemy OP! Now, they know we have an observer out here!

Another bullet found the dome of the OP.

Hulser stared at the hole in terror. *What if they kill me? My idea will die with me! The war will go on and on and—* He jerked toward the phone, screamed into it: "Get me out of here! Get me out of here! Get me out of here!"

When they found him, Hulser was still mumbling the five words.

Chamberlain's lanky form crouched before the OP's crawl hole. The three muffled figures behind him ignored the OP, their heads turning, eyes staring off into the snow, rifles at the ready. The enemy's small arms fire had stopped.

Another one's broke, thought Chamberlain. *I thought shame might make him last a little while longer!*

He dragged Hulser out into the snow, hissed: "What is it, you? Why'd you drag us out into this?"

Hulser swallowed, said, "Sarg, please believe me. I know how to detonate enemy explosives from a distance without even knowing where the explosives are. I can—"

"Detonate explosives from a distance?" Chamberlain's eyes squinted until they looked like twin pieces of flint. *Another one for the head shrinkers unless we can shock him out of it,* he thought. He said, "You've gone off your rocker, you

have. Now, you git down at them instruments and—"

Hulser paled. "No, Sarg! I have to get back where—"

"I could shoot your head off right where you—"

Fear, frustration, anger—all of the complex pressure-borne emotions in Hulser—forced the words out of him: "You big-nosed, ignorant lump. I can end this war! You hear?" His voice climbed. "Take me back to the lieutenant! I'm gonna send your kind back under the rocks you—"

Chamberlain's fist caught Hulser on the side of the head, sent him tumbling into the snow. Even as he fell, Hulser's mind said: *But you told him, man! You finally told him!*

The sergeant glanced back at his companions, thought, *If the enemy heard him, we've had it!* He motioned one of the other men in close. "Mitch, take the watch on this OP. We'll have to get Hulser back."

The other nodded, ducked through the crawl hole.

Chamberlain bent over Hulser. "You stinkin' coward!" he hissed. "I've half a mind to kill you where you sit! But I'm gonna take you in so's I can have the personal pleasure of watchin' you crawl when they turn the heat on you! Now you git on your feet! An' you git to walkin'!"

Major Tony Lipari—"Tony the Lip" to his men—leaned against the canvas-padded wall of his dugout, hands clasped behind his head. He was a thin, oily-looking man with black hair, parted in the middle and slicked to his head like two beetle wings. In civilian life he had sold athletic supplies from a wholesale house. He had once worn a turban to an office party, and it had been like opening a door on his appearance. Somewhere in his ancestry there had been a Moor.

The major was tired *(Casualty reports! Endless casualty reports!)* and irritable, faintly nervous.

We don't have enough men to man the OP's now! he thought. *Do we have to lose another one to the psych boys?*

He said, "The lieuten—" His voice came out in a nervous squeak, and he stopped, cleared his throat. "The lieutenant has told me the entire story, corporal. Frankly, it strikes me as utterly fantastic."

Corporal Hulser stood at attention before the major. "Do I have the major's permission to speak?"

Lipari nodded. "Please do."

"Sir, I was a chemist . . . I mean as a civilian. I got into this branch because I'd dabbled in electronics and they happened to need L-D observers more than they needed chemists. Now, with our shields from—" He broke off, suddenly overwhelmed by the problem of convincing Major Lipari.

He's telling me we need L-D observers! thought Lipari. He said, "Well, go on, Hulser."

"Sir, do you know anything about chemistry?"

"A little."

"What I mean is, do you understand Redox equations and substitution reactions of—"

"Yes, yes. Go on!"

Hulser swallowed, thought: *He doesn't understand. Why won't he send me back to someone who does?* He said, "Sir, you're aware that the insulation layer of our L-D shields is a special kind of protection for—"

"Certainly! Insulates the wearer from the electrical charge of the suit!"

Hulser goggled at the major. "Insulates . . . Oh, no, sir. Begging the major's pardon, but—"

"Is this necessary, corporal?" asked Lipari. And he thought: *If he'd only stop this act and get back to work! It's so obvious he's faking! If—*

"Sir, didn't you get the—"

"I had a full quota of L-D shield orientation when they called me back into the service," said Lipari. "Infantry's my specialty, of course. Korea, you know. But I understand how to operate a shield. Go on, corporal." He kicked his chair away from the wall.

"Sir, what that insulation layer protects the wearer from is a kind of pseudo-substitution reaction in the skin. The suit's field can confuse the body into producing nitrogen bubbles at—"

"Yes, Hulser! I know all that! But what's this have to do with your wonderful idea?"

Hulser took a deep breath. "Sir, I can build a projector on the prin-

ciple of the L-D suits that will produce an artificial substitution reaction in any explosive. I'm sure I can!"

"You're sure?"

"Yes, sir. For example, I could set up such a reaction in Trinox that would produce flourine and ionized hydrogen—in minute quantities, of course—but sufficient that any nearby field source would detonate—"

"How would you make sure there was such a field in the enemy's storage area?"

"Sir! Everybody wears L-D shields of one kind or another! They're field generators. Or an internal combustion motor . . . or . . . or just anything! If you have an explosive mixture collapsing from one system into another in the presence of flourine and hydrogen—" He shrugged. "It'd explode if you looked crosseyed at it!"

Lipari cleared his throat. "I see." Again he leaned back against the wall. The beginnings of an eyestrain headache tugged at his temples. *Now, the put-up-or-shut-up,* he thought. He said, "How do we build this wonderful projector, corporal?"

"Sir, I'll have to sit down with some machinists and some E-techs and—"

"Corporal, I'll decide who sits down with whom among my men. Now, I'll tell you what you do. You just draw up the specifications for your projector and leave them with me. I'll see that they get into the proper hands through channels."

"Sir, it's not that simple. I have all of the specs in my head now, yes, but in anything like this you have to work out bugs that—"

"We have plenty of technical experts who can do that," said Lipari. And he thought: *Why doesn't he give up? I gave him the chance to duck out gracefully! Scribble something on some paper, give it to me. That's the end of it!*

"But, sir—"

"Corporal! My orderly will give you paper and pencil. You just—"

"Sir! It can't be done that way!"

Lipari rubbed his forehead. "Corporal Hulser, I am giving you an order. You will sit down and produce the plans and specifications for your projector. You will do it now."

Hulser tasted a sourness in his mouth. He swallowed. *And that's the last we'd ever hear of Corporal Larry Hulser,* he thought. *Tony the Lip would get the credit.*

He said, "Sir, after you submit my plans, what would you do if someone asked, for example, how the polar molecules of—"

"You will explain all of these things in your outline. Do I make myself clear, corporal?"

"Sir, it would take me six months to produce plans that could anticipate every—"

"You're stalling, corporal!" Major Lipari pushed himself forward, came to his feet. He lowered his voice. "Let's face it, Hulser. You're faking! I know it. You know it. You just

had a bellyful of war and you decided you wanted out."

Hulser shook his head from side to side.

"It's not that simple, corporal. Now, I've shown you in every way I can that I understand this, that I'm willing to—"

"Begging the major's pardon, but—"

"You will do one of two things, Corporal Hulser. You either produce the diagrams, sketches or whatever to prove that you *do* have a worthy idea, or you will go back to your unit. I'm done fooling with you!"

"Sir, don't you under—"

"I could have you shot under the Articles of War!"

And Lipari thought: *That's what he needs—a good shock!*

Bitter frustration almost overwhelmed Hulser. He felt the same kind of anger that had goaded him to attack Sergeant Chamberlain. "Major, enough people know about my idea by now that at least some of them would wonder if you hadn't shot the goose that laid the golden egg!"

Lipari's headache was full-blown now. He pushed his face close to Hulser's. "I have some alternatives to a firing squad, corporal!"

Hulser returned Lipari's angry glare. "It has occurred to me, *sir,* that this project would suddenly become 'our' project, and then 'your' project, and somewhere along the line a mere corporal would get lost!"

Lipari's mouth worked wordlessly. Presently, he said, "That did it, Hulser! I'm holding you for a general court! There's one thing I can do without cooking any goose but yours!"

And that ends the matter as far as I'm concerned, thought Lipari. *What a day!*

He turned toward the door of his dugout. "Sergeant!"

The door opened to admit Chamberlain's beanpole figure. He crossed the room, came to attention before Lipari, saluted. "Sir?"

"This man is under arrest, sergeant," said Lipari. "Take him back to area headquarters under guard and have him held for a general court. On your way out send in my orderly."

Chamberlain saluted. "Yes, sir." He turned, took Hulser's arm. "Come along, Hulser."

Lipari turned away, groped on a corner shelf for his aspirin. He heard the door open and close behind him. And it was not until this moment that he asked himself: *Could that crackpot actually have had a workable idea?* He found the aspirin, shrugged the thought away. *Fantastic!*

Hulser sat on an iron cot with his head in his hands. The cell walls around him were flat, riveted steel. It was a space exactly the length of the cot, twice as wide as the cot. At his left, next to the foot of the bed, was a barred door. To his right, at the other end of the floor

space, were a folding washbasin with water closet under. The cell smelled foul despite an overriding stink of disinfectant.

Why don't they get it over with? he asked himself. *Three days of this madhouse! How long are they—*

The cell door rattled.

Hulser looked up. A wizened figure in a colonel's uniform stood on the other side of the bars. He was a tiny man, gray-haired, eyes like a curious bird, a dried parchment skin. In the proper costume he would have looked like a medieval sorcerer.

A youthful MP sergeant stepped into view, unlocked the door, stood aside. The colonel entered the cell.

"Well, well," he said.

Hulser came to his feet, saluted.

"Will you be needing me, sir?" asked the MP sergeant.

"Eh?" The colonel turned. "Oh. No, sergeant. Just leave that door open and—"

"But, sir—"

"Nobody could get out of this cell block, could they sergeant?"

"No, sir. But—"

"Then just leave the door open and run along."

"Yes, sir." The sergeant saluted, frowned, turned away. His footsteps echoed down the metal floor of the corridor.

The colonel turned back to Hulser. "So you're the young man with the bright idea."

Hulser cleared his throat. "Yes, sir."

The colonel glanced once around the cell. "I'm Colonel Page of General Savage's staff. Chemical warfare."

Hulser nodded.

"The general's adjutant suggested that I come over and talk to you," said Page. "He thought a chemist might—"

"Page!" said Hulser. "You're not the Dr. Edmond Page who did the work on pseudo-lithium?"

The colonel's face broke into a pleased smile. "Why . . . yes, I am."

"I read everything about your work that I could get my hands on," said Hulser. "It struck me that if you'd just—" His voice trailed off.

"Do go on," said Page.

Hulser swallowed. "Well, if you'd just moved from organic chemistry into inorganic, that—" He shrugged.

"I might have induced direct chemical rather than organic reactions?" asked Page.

"Yes, sir."

"That thought didn't occur to me until I was on my way over here," said Page. He gestured toward the cot. "Do sit down."

Hulser slumped back to the cot.

Page looked around, finally squeezed past Hulser's knees, sat down on the lid of the water closet. "Now, let's find out just what your idea is."

Hulser stared at his hands.

"I've discussed this with the general," said Page. "We feel that you may know what you're talking about. We would deeply appreciate a complete explanation."

"What do I have to lose?" asked Hulser.

"You may have reason for feeling bitter," said Page. "But after reading the charges against you I would say that you've been at least partly responsible for your present situation." He glanced at his wrist watch. "Now, tell me exactly how you propose to detonate munitions at a distance . . . this projector you've talked about."

Hulser took a deep breath. *This is a chemist,* he thought. *Maybe I can convince him.* He looked up at Page, began explaining.

Presently, the colonel interrupted. "But it takes enormous amounts of energy to change the atomic—"

"I'm not talking about changing atomic structure in that sense, sir. Don't you see it? I merely set up an artificial condition *as though* a catalyst were present. A pseudo-catalyst. And this brings out of the static mixture substances that are already there: Ionized hydrogen from moisture—fluorine from the actual components in the case of Trinox. White phosphorus from Ditrate. Nitric oxide and rhombic sulfur from common gunpower."

Page wet his lips with his tongue. "But what makes you think that—in a nonorganic system—the presence of the pseudo-catalyst—" He shook his head. "Of course! How stupid of me! You'd first get a polar reaction—just as I did with pseudo-lithium. And that would be the first step into—" His eyes widened and he stared at Hulser. "My dear boy, I believe you've opened an entirely new field in nonorganic chemistry!"

"Do you see it, sir?"

"Of course I see it!" Page got to his feet. "You'd be creating an artificial radical with unstable perimeter. The presence of the slightest bit of moisture in that perimeter would give you your ionized hydrogen and—" He clapped his hands like a small boy in glee. "Kapowie!"

Hulser smiled.

Page looked down at him. "Corporal, I do believe your projector might work. I confess that I don't understand about field lattices and these other electronic matters, but you apparently do."

"Yes, sir."

"How did you ever stumble onto this?" asked Page.

"I was thinking about the lattice effect in our Life Detector systems—when suddenly, there it was: the complete idea!"

Page nodded. "It was one of those things that had to remain dormant until the precisely proper set of circumstances." Page squeezed past Hulser's knees. "No, no. Stay right there. I'm going to set up a meeting with Colonel Allenby of the L-D section, and I'll get in someone with more of a mechanical bent—probably Captain Stevens." He nodded. "Now, corporal, you just stay right here until—" His glance darted around the cell, and he laughed nervously. "Don't you worry, young man. We'll have you out of here in a few hours."

Hulser was to look back on the five weeks of the first phase in "Operation Big Boom" as a time of hectic unreality. Corps ordered the project developed in General Savage's reserve area after a set of preliminary plans had been shipped outside. The thinking was that there'd be less chance of a security leak that close to a combat zone, and that the vast barrens of the reserve area offered better opportunity for a site free of things that could detonate mysteriously and lead to unwanted questions.

But Corps was taking no chances. They ringed the area with special detachments of MP's. Recording specialists moved in on the project, copied everything for shipment stateside.

They chose an open tableland well away from their own munitions for the crucial test. It was a barren, windy place: gray rocks poking up from frozen earth. The long black worm of a power cable stretched away into the distance behind the test shelter.

A weasel delivered Hulser and Page to the test site. The projector box sat on the seat between them. It was housed in a green container two feet square and four feet long. A glass tube protruded from one end. A power connection, sealed and with a red "do not connect" sign, centered the opposite end. A tripod mounting occupied one side at the balance point.

The morning was cold and clear with a brittle snap to the air. The sky had a deep cobalt quality, almost varnished in its intensity.

About fifty people were gathered for the test. They were strung out through the shelter—a long shed open along one side. An empty tripod stood near the open side and almost in the center. On both sides of the tripod technicians sat before recording instruments. Small black wires trailed away ahead of them toward an ebony mound almost a mile from the shed and directly opposite the open side.

General Savage already was on the scene, talking with a stranger who had arrived that morning under an impressive air cover. The stranger had worn civilian clothes. Now, he was encased in an issue parka and snow pants. He didn't look or act like a civilian. And it was noted that General Savage addressed him as "sir."

The general was a brusque, thick-bodied man with the overbearing confidence of someone secure in his own ability. His face held a thick-nosed, square-jawed bulldog look. In fatigues without insignia, he could have been mistaken for a sergeant. He looked the way a hard, old-line sergeant is expected to look. General Savage's men called him "Me Tarzan" mainly because he took snow baths, mother naked, in sub-zero weather.

A white helmeted security guard ringed the inside of the test shed. Hulser noted that they wore no side-arms, carried no weapons except hand-held bayonets. He found him-

self thinking that he would not have been surprised to see them carrying crossbows.

General Savage waved to Page as the colonel and Hulser entered the shed. Colonel Page returned the gesture, stopped before a smooth-cheeked lieutenant near the tripod.

"Lieutenant," said Page, "have all explosives except the test stack been removed from the area?"

The lieutenant froze to ramrod attention, saluted. "Yes, sir, colonel."

Page took a cigarette from his pocket. "Let me have your cigarette lighter, please, lieutenant."

"Yes, sir." The lieutenant fumbled in a pocket, withdrew a chrome lighter, handed it to Page.

Colonel Page took the lighter in his hand, looked at it for a moment, hurled both lighter and cigarette out into the snow. The lighter landed about sixty feet away.

The lieutenant paled, then blushed.

The colonel said, "Every cigarette lighter, every match. And check with everyone to see that they took those special pills at least four hours ago. We don't want any *internal* combustion without a motor around it."

The lieutenant looked distraught. "Yes, sir."

"And, lieutenant, stop the last weasel and have the driver wait to cart the stuff you collect out of our area."

"Yes, sir." The lieutenant hurried away.

Page turned back to Hulser, who had mounted the projector on its tripod, now stood beside it.

"All ready, sir," said Hulser. "Shall I connect the cable?"

"What do you think?" asked Page.

"We're as ready as we'll ever be."

"O.K. Connect it, then stand by with the switch in your hands."

Hulser turned to comply. And now, as the moment of the critical test approached, he felt his legs begin to tremble. He felt sure that everyone could see his nervousness.

A tense stillness came over the people in the shed.

General Savage and his visitor approached. The general was explaining the theory of the projector.

His visitor nodded.

Seen close-up, the other man gave the same impression of hard competence that radiated from General Savage — only more competent, harder. His cheek bones were like two ridges of tan rock beneath cavernous sockets, brooding dark eyes.

General Savage pointed to the black mound of explosives in the distance. "We have instruments in there with the explosives, sir. The wires connect them with our recorders here in the shed. We have several types of explosives to be tested, including kerosene, gasoline, engine oil. Everything we could lay our hands on except atomics. But if these things blow, then we'll know the projector also will work on atomics."

The visitor spoke, and his voice came out with a quality like a stick dragged through gravel. "It was explained to me that—the theory being correct—this projector will work on any petroleum fuel, including coal."

"Yes, sir," said Savage. "It is supposed to ignite coal. We have a few lumps in a sack to one side. You can't see it because of the snow. But our instruments will tell us which of these things are affected"—he glanced at Hulser—"if any."

Colonel Page returned from checking the recording instruments.

Savage turned to the colonel. "Are we ready, Ed?"

"Yes, general." He glanced at Hulser, nodded. "Let's go, Larry. Give it power."

Hulser depressed the switch in his hand, involuntarily closed his eyes, then snapped them open and stared at the distant explosives.

A low humming arose from the projector.

Page spoke to the general. "It'll take a little time for the effect to build u—"

As he started to say "up" the mound of explosives went *up* in a giant roaring and rumbling. Colonel Page was left staring at the explosion, his mouth shaped to say "p."

Steam and dust hid the place where the explosives had been.

The gravel voice of the visitor spoke behind Hulser. "Well, there goes the whole shooting match, general. And I *do* mean shooting!"

"It's what we were afraid of, sir," said Savage. "But there's no help for it now." He sounded bitter.

Hulser was struck by the bitterness in both voices. He turned, became conscious that the lieutenant whom Page had reprimanded was beating at a flaming breast pocket, face livid. The people around him were laughing, trying to help.

Page had hurried along the line of recorders, was checking each one.

The significance of the lieutenant's antics suddenly hit Hulser. *Matches! He forgot his spare matches after losing his cigarette lighter!* Hulser glanced to where the colonel had thrown the lighter, saw a black patch in the snow.

Page returned from checking the recorders. "We can't be sure about the coal, but as nearly as we can determine, it touched off everything else in the stack!" He put an arm on Hulser's shoulder. "This young genius has won the war for us."

The (civilian?) snorted.

Savage turned, scowled at Hulser.

But Hulser was staring out at the explosion crater, a look of euphoria on his face.

The technicians were moving out into the area now, probing cautiously for unexploded fragments.

The general and his visitor exchanged a glance that could have meant anything.

Savage signaled his radio operator to call for transportation.

Presently, a line of weasels came roaring up to the test site.

Savage took Hulser's arm in a firm grip. "You'd better come with us. You're a valuable piece of property now."

Hulser's mind came back to the curious conversation between Savage and the visitor after the explosion, and he was struck by the odd sadness in the general's voice. *Could he be an old war dog sorry to see it end?* Somehow, on looking at the general, that didn't fit.

They sped across the barrens to the base, Hulser uncomfortable between the general and his visitor. Apparently, no one wanted to discuss what had just happened. Hulser was made uncomfortable by the lack of elation around him. He looked at the back of the driver's neck, but that told him nothing.

They strode into the general's office, an oblong room without windows. Maps lined the walls. A low partition separated one space containing two barren tables from another space containing three desks, one set somewhat apart. They crossed to the separate desk.

Savage indicated his visitor. "This is Mr. Sladen." There was a slight hesitation on the "mister."

Hulser suppressed a desire to salute, shook hands. The other man had a hard grip in an uncalloused hand.

Sladen's gravelly baritone came out brusque and commanding. "Brief him, general. I'll go get my people and their gear together. We'll have to head right back."

Savage nodded. "Thank you, sir. I'll get right at it."

Sladen cast a speculative look at Hulser. "Make sure he understands clearly what has just happened. I don't believe he's considered it."

"Yes, sir."

Sladen departed.

Hulser felt an odd sinking sensation in his stomach.

Savage said, "I'm not rank happy, Hulser, and we haven't much time. We're going to forget about military formality for a few minutes."

Hulser nodded without speaking.

"Do you know what has just happened?" asked Savage.

"Yes, sir. But what puzzles me is that you people don't seem pleased about our gaining the whip hand so we can win this war. It's—"

"It's not certain that we have the whip hand." Savage sat down at his desk, picked up a book bound in red leather.

"You mean the enemy—"

"Bright ideas like yours just seem to float around in the air, Hulser. They may already have it, or they could be working on it. Otherwise, I'd have seen that your brainstorm was buried. It seems that once human beings realize something can be done, they're not satisfied until they've done it."

"Have there been any signs that the enemy—"

"No. But neither have *they* seen any signs of *our* new weapon . . . I hope. The point is: we do have it and we're going to use it. We'll probably overwhelm them before they can do anything about it. And that'll be the end of *this* war."

"But, if explosives are made obsolete, that'll mean an end to all wars," protested Hulser. "That's what I'm concerned about!"

The general sneered. "Nothing, my bright-eyed young friend, has thus far made war impossible! When this one's over, it'll be just a matter of time until there's another war, both sides using your projector."

"But, sir—"

"So the next war will be fought with horse cavalry, swords, crossbows and lances," said Savage. "And there'll be other little *improvements!*" He slammed the red book onto his desk, surged to his feet. "Elimination of explosives only makes espionage, poisons, poison gas, germ warfare—all of these—a necessity!"

"How can you—"

"Don't you understand, Hulser? You've made the military use of explosives impossible. That means gasoline. The internal combustion motor is out. That means jet fuels. Airplanes are out. That means gunpowder. Everything from the smallest sidearm to the biggest cannon is out!"

"Certainly, but—"

"But we have other alternatives, Hulser. We have the weapons King Arthur used. And we have some *modern* innovations: poison gases, curare-tipped crossbow bolts, bacterial—"

"But the Geneva Convention—"

"Geneva Convention be damned! And that's just what will happen to it as soon as a big enough group of people decide to ignore it!" General Savage hammered a fist on his desk. "Get this! Violence is a part of human life. The lust for power is a part of human life. As long as people want power badly enough, they'll use any means to

get it—fair or foul! Peaceful or otherwise!"

"I think you're being a pessimist, sir."

"Maybe I am. I *hope* I am. But I come from a long line of military people. We've seen some things to make us pessimists."

"But the pressures for peace—"

"Have thus far not been strong enough to prevent wars, Hulser." The general shook his head. "I'll tell you something, my young friend: When I first saw the reference to your ideas in the charges against you, I had the sinking sensation one gets when going down for the third time. I hoped against hope that you were wrong, but I couldn't afford *not* to investigate. I hoped that Major Lipari and Sergeant Chamberlain had you pegged for—"

The general stopped, glared at Hulser. "There's another bone I have to pick with you! Your treatment of two fine soldiers was nothing short of juvenile! If it wasn't for the Liparis and the Chamberlians, you'd be getting thirty lashes every morning from your local slave keeper!"

"But, sir—"

"Don't 'But, sir' me, Hulser! If there was time before you leave, I'd have you deliver personal apologies to both of them!"

Hulser blushed, shook his head. "I don't know. All I really know is that I was sure my idea would work, and that Lipari and Chamberlain didn't understand. And I knew if I was killed, or if my idea wasn't developed, the enemy might get it first."

Savage leaned back against his desk, passed a hand across his eyes. "You were right, of course. It's just that you were bucking the system, and you're not the right kind to buck the system. Your kind usually fails when you try."

Hulser sighed.

"You're now a valuable piece of property, my lad. So don't feel sorry for yourself. You'll be sent home where you can be around when your wife has that child."

Hulser looked surprised.

"Oh, yes, we found out about her," said Savage. "We thought at first you were just working a good dodge to get home to her." He shrugged. "You'll probably have it fairly soft now. You'll be guarded and coddled. You'll be expected to produce another act of *genius*! The Lord knows, maybe you *are* a genius."

"You wait and see, sir. I think this will mean an end to all wars."

The general suddenly looked thoughtful. "Hulser, a vastly underrated and greatly despised writer—in some circles—once said, 'There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.' That's a very deep statement, Hulser. And there you are, way out in front with 'a new order of things.' I hope for the sake of that child you're going

to have—for the sake of all children —that we don't have another war." He shrugged. "But I don't hold out too—"

Sladen popped back into the office. "Our air cover's coming up, general. We'll have to take him like he is. Send his gear along later, will you?"

"Certainly, sir." Savage straightened, stuck out his right hand, shook with Hulser. "Good luck, Hulser. You take what I said to heart. It's the bitter truth that men of war have to live with. You weren't attacking the source of the problem with your bright idea. You were attacking one of the symptoms."

Savage's left hand came up from his desk with the red book. "Here's a gift for that child you're going to have." He pressed the book into Hulser's hands. "The next generation will need to understand this book."

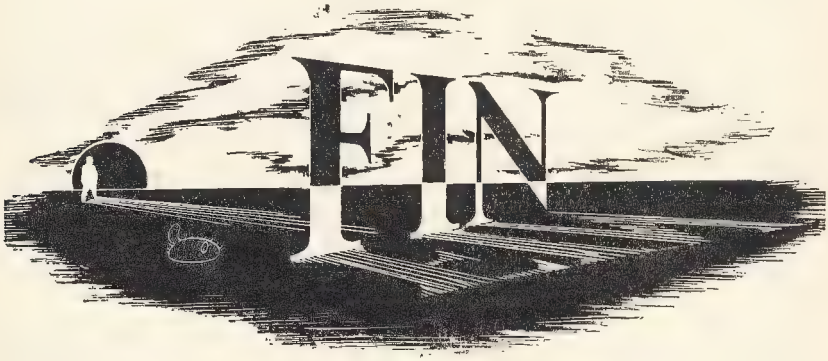
Hulser had time to say, "Thank you, sir." Then he was propelled out the door by Sladen.

It was not until he was on the plane winging south that Hulser had an opportunity to examine the book. Then he gripped it tightly in both hands, stared out the window at the sea of clouds. The book was a limited edition copy, unexpurgated, of the works of Niccolo Machiavelli, the master of deceit and treachery.

EPILOGUE

Many people labor under the misapprehension that the discovery of the Hulser Detonator was made in a secret government laboratory. In actuality, the genius of Dr. Lawrence Hulser was first seen on the Arctic battlefields of 1972 where he conceived his idea and where that idea was immediately recognized.

Beecher Carson,
"The Coming of the Sword—A History of Ancient and Modern Wars"
Vol. 6, p. 112



SHORT HISTORY

OF WORLD WAR THREE

BY MURRAY LEINSTER

Illustrated by Freas

Precisely what constitutes a "war" can become somewhat hard to define, these days. "Cold War"—"economic war"—"propaganda war"—and perhaps, as Leinster suggests, a war in which one side doesn't know it's actual war. . . .

On the day before World War Three began, the Moscow *Pravda* was running a series of articles on corruption in the United States, and on that day it compared the cost of bribing officials in the United States with the current rates in the Soviet Union. It put the American rates as much higher, and thereby caused many MVD men to wonder wistfully if, should they sneak off to the West, they could get FBI jobs on the basis of their MVD experience.

On the same day, the New York newspapers dealt with a scandal in the New York port authority. San Franciscans read about an unseasonable storm in Florida. In Rome the details of a fancy murder were revealed, and in London the papers fumed over a statement made by a minor Near East politician while plastered to the gills on *arak*.

However, while private citizens of

the world read contentedly about the sins and indiscretions of their fellows, much more purposeful activity went on among the military. There was, for example, the Gulf of California—Baja California. The waves were of the usual color. So was the sky. Gulls flittered close to the water's surface. The sunbaked coastline seemed to smoke slightly in the heat. All appeared normal, like the newspapers. But there was a difference.

Beneath the waters of the Gulf an ominous dark shadow moved. It did not break the surface. It moved with a vast and cautious deliberation, following the curve of the deepest soundings. It was the Russian submarine *Vishinsky*—named for a Soviet hero who had lately received posthumous rehabilitation and tributes. Two nights before, it had surfaced to take accurate bearings on Cabo Falso and check its navigation. Last night it had checked position again by the lights of the smelters to the north of Santa Rosalia. Now it proceeded underwater with magnificent precision.

Through weeks of totally submerged journeying it had moved steadily and secretly to this destination. Now its sonar reported that it had no undesirable company. There were only large swordfish and manta rays of excessive size about—though some sharks, to be sure, did follow it hopefully on the chance of garbage. They were disappointed.

It moved northward throughout the afternoon. Night fell as it swam. Hours of darkness passed as it proceeded. Ultimately dawn approached. It came to be only an hour before sunrise. The *Vishinsky* had passed San Luis and Cantada Islands; passed Point San Fermin, and San Felipe. Everything checked. So when it swung to port and nosed for the three-hundred-foot-wide channel into Ometepes Bay, its skipper decided upon a fine technical flourish. At high tide—and parts of the Gulf have a twenty-five foot tidal range—it was possible to enter Ometepes Bay submerged. He did it.

It put a fine polish on Commander Alexandrovitch's feat. He'd brought his ship some twelve thousand miles, unseen and unsuspected. He'd done some fine and finicky navigation, and arrived at his destination on the planned minute. He gave a prepare-for-action command. He was to go through the simulated launching of middle-range atomic-warhead missiles upon Los Angeles, San Francisco, Cucamanga, and other spots. Then he was to re-submerge and return as stealthily as he had come. It was a dry run, of course. He did not intend actually to shoot anything at anybody. But when World War Three did break out—it was scheduled for some months hence—he would repeat this performance in earnest, and everything would be familiar and nothing could go wrong.

The sub killed its forward motion in Ometepes Bay. Clankings echoed in its interior. The ready-for-action buzzer sounded, and everything was

set. Commander Alexandrovitch, beaming, gave the command to blow all tanks. Compressed air hissed. Somewhere a valve fluttered and emitted a groaning sound. The ship rose. The Russian submarine rose splendidly from beneath the sea, its rocket-launching snout already elevating itself; water streamed in foamy cascades from its deck. It was in Ometepes Bay, an excellent but uninhabited harbor some three miles in diameter, a certain distance below the American border. It should have been able to get off no less than nine imaginary intermediate-range atomic missiles within fourteen minutes forty-seven seconds.

Paling stars shone upon it as it surfaced. The skipper barked his orders for the dry-run procedure—and then he choked. Because there was a searchlight bathing the *Vishinsky* in a harsh white light. There were dimming riding-lights of surface-vessels, at anchor. As Commander Alexandrovitch gaped, strangling, a motor-launch headed purposefully for his ship. Spotlights played upon a banner above it. The banner read, "WELCOME VISHINSKY!" Other searchlights swept across the fading sky in that form of celebration appropriate to the opening of filling-stations and drive-in theaters. They also flickered on the hulls of three United States rocket-launching ships, two Mexican destroyers, and two American destroyers of the large, economy size. All these vessels were anchored in a most disconcerting pattern. It happened that all had guns, rockets and torpedo tubes bearing negligently upon the Russian submarine.

The motor-launch hooked onto the *Vishinsky* with a boat hook, and an American naval officer said cordially:

"Congratulations, Commander Alexandrovitch! You did a magnificent job, sir! Our Task Force commander presents his compliments and asks if you will breakfast with him and the commanders of the Mexican destroyers maneuvering with us, to let them congratulate you in person!"

The skipper of the *Vishinsky,* stunned, realized that he had been greeted by a welcoming committee all set to squash his ship like an inconvenient bug, if necessary. It was pure accident, of course. Oh, surely it was pure accident! But it was a fact that if the *Vishinsky* had been here on business instead of rehearsal, she'd have been sunk in five seconds.

Commander Alexandrovitch gasped a little. Presently, shaking, he accepted the invitation. But as he rode across the bay in the dawnlight he saw ever new proofs that his arrival had been anticipated to the second and to the very spot where he had surfaced. It was, of course, impossible. But he struggled helplessly to understand how it had happened.

The important thing, really, was not how it had happened, but what the incident was. In fact, it was the first military action of World War Three.

There were others, of course.

When a war begins, things move fast. At the very instant when Commander Alexandrovitch tremblingly tried to drink his first cup of coffee —something else was happening elsewhere. Many things.

One of them took place on the northeastern coast of the United States. It was another phase of the dry-run exercise which was preparation for performances which would not be phony. This one did not involve tricky maneuvering. The tricky stuff had been done two full weeks before. Some forty miles east-northeast of Manticus Island, Maine, the Soviet submarine *Potemkin* lay peacefully on the ocean bottom. It had crossed the Atlantic bolted with massive connections to the Soviet merchant-ship *Krokodil*. Directly underneath the surface-vessel, it could not be spotted from the air by blimp. It could not be noted as a separate vessel by sonar. It could not be picked up by radar. Two weeks ago, the connection between the *Krokodil* and the *Potemkin* had been severed at this spot. The *Krokodil* went on. The sub, without surfacing, went down to the bottom and stayed there. The *Krokodil* steamed into New York Harbor, got into a fine, hot-tempered argument with the longshoreman's union, and was picketed by indignant persons carrying signs reading, *"The USSR is a Bunch of Dirty Capitalists!"* After which the *Krokodil* went home, leaving the submarine *Potemkin* on the seabottom off the coast of Maine.

On the same morning as the *Vishinsky's* adventure, the *Potemkin* was due to surface and fire twelve theoretic atomic missiles, compared to the Vishinsky's nine. It should then submerge gracefully and go somewhere else. It was another part of what the Soviet high brass considered a dress rehearsal for that time, five months hence, when the war-mongering United States would offer peace-loving Russia an insult which self-respecting Communists, if any, could not submit to.

It was meant, to repeat the fact, as a rehearsal only. So at 7:12 Eastern Standard time in the morning, the *Potemkin* got ready to do its stuff. Its crew stirred.

There came the sound of propellers in the sound-detection gear. Commander Valevitch of the *Potemkin* received the report. He scowled. He was due to go through the motions of destroying some millions of decadent capitalistic slaves at 8:14 Eastern Standard time, to match up with what was theoretically happening in the Gulf of California. It matched other activities, too. But Commander Valevitch did not want to be caught at his perfectly innocent performance.

The propeller noises doubled. They multiplied. There were at least six ships, traveling at high speed, headed toward the *Potemkin* from over the horizon. No. . . . Four ships traveled fast, their engines and propellers making the distinctive sound of destroyers at full speed ahead. Two other ships made slower, labored, throbbing noises, as if try-

ing to keep pace with the destroyers but not succeeding.

Commander Valevitch swore. He went to the sonar board to find out what was up. He was not alarmed, but he was uneasy.

The sonar gear said specifically that the destroyers would pass directly overhead. One was well in the lead. The hair crawled on Commander Valevitch's scalp when he heard the *pings* of sub-detection equipment in use. In a hoarse whisper he commanded silence and stillness on board. Nothing must move! Nothing!

With a splendid, mounting, roaring noise, the leading destroyer passed directly overhead, reversed engines, lost way, and the *ping-ping-ping* of its sonar was loud indeed. It began to steam in a tight circle above the *Potemkin*. The other destroyers came scampering up. Their sonars joined in a chorus. They made tiny, piping noises that went up and down the scale to form a cacophony something like ultra-modernistic music played by a flute quartet. Commander Valevitch gnawed at his mustache. He had broken no international law, of course. But on the other hand, if the American vessels just happened to pick this spot to test depth-bombs in, they wouldn't break any law, either. Commander Valevitch began to have the shakes.

Then one destroyer stopped dead and there were clankings. Something was being got overboard. Commander Valevitch heard the sounds of a small internal-combustion engine. The sonar man reported, gibbering, that a motor-launch was moving to a spot directly overhead. There was a pause. Then something metallic touched the hull of the submarine, on the outside. It was not an ominous sound, in itself. It was the clanking of not too large an object, coming into contact with a hull-plate, and clinging.

Another pause. There came a voice. It came through the plating. In one frantic instant of perception, the skipper realized that a contact-speaker had been lowered to his ship and was magnetically held fast. Somebody on the surface spoke, and his voice came into the sub on the bottom through its hull.

"Hello!" said the voice, cordial but metallic because of the method of its transmission. *"On board the* Potemkin! *Do you need any help?"*

The Russian skipper knew English. But he did not reply. He felt purest, unadulterated anguish. He began to eat his mustache. He had the right to be here, of course. He could stay on the sea-bottom for as long as he chose, if he felt like it, and nobody could rightfully complain. But nevertheless . . .

"We've microphones in action," said the metallic voice, solicitously. *"If you bang on something with a hammer, we'll hear it. Please do!"*

Commander Valevitch wrung his hands. His crew—or such members as did not know English—blanched with terror at the sound of a voice

coming from the sea into their ship. Those who understood English did more than turn white. Most of them turned gray.

"Hello, Potemkin*!"* repeated the voice anxiously. *"Hello! Bang on something if you hear me!"*

There was paralyzed silence in the submarine. The sub skipper finished eating the left-hand side of his mustache and began to eat the right. Then the voice came in a different timber, as if the speaker had turned from the microphone.

"Either," he said in a tone of regret, *"they're all dead or they don't understand English. Signal for somebody who speaks Russian to be sent over. How long before the rescue boats get here?"*

There was evidently a reply. The cheery voice came again.

"Hello, the Potemkin*!"* it said urgently. *"Don't give up hope! We've got two rescue boats coming at top speed! In half an hour we'll have chains on you and can get at least your bow above-water! Then we'll cut through your hull with torches so you can get out! Only half an hour!"*

The Russian skipper found his voice. It was not much of a voice. It was a bare whisper. But in that whisper he uttered such masterpieces of profanity that even his sea-hardened crew ceased to be pale-faced. They blushed.

But he held out. Despairingly, he refused to reply to signals until a large, slow, throbbing ship arrived with cumbersome noises and divers descended with clanking chains. They essayed to put a chain-loop around the *Potemkin*'s bow, so they could haul it to the surface for the rescue of its crew. When the chains made contact, Commander Valevitch gave in. Sobbing, he ordered the tanks blown. He surfaced—at 8:12 Eastern Standard Time—right beside a broad-beamed workhorse of the Navy—a machine-shop ship with emergency submarine rescue equipment. But there were also destroyers close by. Automatically, the Russian skipper noted that they had depth-charges ready to drop. Not conspicuously ready, but ready enough.

Weeping, Commander Valevitch spoke into a radio transmitter:

"I have no need for rescue," he said through his tears. "I was making an experiment to determine the changes of water-temperature in differnt phases of the moon. I do not need rescue!"

A brisk voice spoke over ship-to-ship radio. It sounded embarrassed.

"Oh. . . . Sorry, Commander Valevitch. We thought you were in trouble! Can we help you in your observations? And won't you send someone aboard us for the latest Moscow newspapers? The Admiral ordered us to bring them for you. We'll be glad to be of service!"

The Russian skipper tore his hair.

"No thank you," he panted. "No thank you! I . . . I have orders to return to base immediately!"

He gave a strangled command. The sub's propellers began to turn. Blindly, she headed for the eastern

horizon. A destroyer had to swerve a trifle to get out of her way. The sub did not even submerge. She made better time on the surface, and her skipper wanted to get away from there—fast!

He did not understand how the Americans could have known where his ship was—they'd come straight to it from across the horizon—nor why they picked the very instant before he was due to surface, to offer help in a nonexistent jam. In fact, he didn't even know *what* had happened.

Actually, this was the second incident—the second military action—in World War Three. The Russians thought they were getting ready for it. They didn't know it was going on.

It was. In Chicago, a traveling second assistant commercial attaché of the Soviet consular service got out of a cab. He went into a building, came out of another door, got another cab, took it to another place, switched to a bus, walked down an alley, made quite sure nobody was trailing him, and then ducked underground and passed through three communicating cellars. Then he painstakingly climbed eleven flights of stairs. There he put a key in the lock of an office door marked *"Pushtu Information Service."* This was at 6:10 Central Standard time and was very neat synchronization. But as he put his hand on the doorknob, it was turned from inside. A blue-eyed man wearing an unskillfully arranged turban pulled it wide and beamed at him.

"Yes, *sahib?*" said the turbaned man in a Midwestern accent. "Can I be of service to you?"

The second assistant commercial attaché went very pale. His eyes bugged out. The turbaned man took his hand and shook it warmly. He pulled the suddenly limp consular agent inside.

"I think," he said cheerfully, in the same Midwestern accent, "you are the Mr. Bogoloff who wrote to ask for information about commercial opportunities for induction furnaces in the Pushtu-speaking villages of India."

The consular attaché became numb. His name was Bogoloff, but he had not written to ask anybody any information about anything.

"Our appointment was an early one," said the turbaned man happily, "and I only got here. I'll get the information—"

He went to the distinctly oversized safe against one wall. With brisk precision, he spun its knob and opened its door. Then he pulled out a small drawer. He took out two loose wire-ends—and jammed them together.

The second assistant consular attaché fainted. When he came to, in a hospital, he did not know what had happened. He knew what should have, of course. There was a clock in that drawer. When both of those wires were plugged into it—but not either one separately—the clock should have closed a circuit at 7:14

Central time that morning, and the megaton fusion bomb which looked so much like a safe both inside and out should have gone off. If the clock was by-passed, it should go off on the instant. It had been by-passed. But the bomb hadn't gone off.

The second assistant consular attaché, lying feebly in his hospital bed, happened to think of the significance of the fact that it hadn't. At the thought, he fainted again.

. . . In the lower reaches of the Hughli, a bumboat drifted alongside an anchored American carrier. Its crew was pumping desperately. When at its nearest to the ship, a launch came sturdily around the carrier's stern. Sailors helpfully boarded the bumboat and began to help pump. But they had—very surprisingly—a large-volume motor-driven pump in the launch—with hoses. It pulled the water out of the bumboat with amazing speed. But it was even more amazing that a group of six sailors went efficiently to the soggily awash cargo of the bumboat, tossed it expertly aside, and as expertly de-fused a mechanism hidden under it. They then put the cargo neatly back into place. Other sailors efficiently passed a tarpaulin under the bumboat's hull, thereby checking the inflow of water. They made all fast and the launch went away, amid hand-waves from the sailors.

The crew of the bumboat was singularly silent and helpless during this procedure. Of course, this morning they had planned to overcome the leak and then go about their business. But when World War Three—in their opinion—actually began, the bumboat was to sink alongside that of another carrier, and its occupants were to paddle sadly away in the bumboat's small, towed dinghy. The mine under the cargo should then explode at some future equivalent of 5:14 Pacific time, or 7:14 Central, or 8:14 Eastern Standard, to be simultaneous with other scheduled events.

The same, frustrating, American helpfulness was displayed all over the world, that morning. There was an incident in Naples harbor, where the United States Mediterranean Fleet was at anchor. And there was a quaint affair down in the Gulf of Mexico—because New Orleans and the Southeast generally were included in the rehearsal plan. But there was quite a mix-up in Washington. That business almost got into the newspapers. Not that anything really happened, of course, but there was some confusion at the Russian Embassy. Some of its staff did not quite believe that the scheduled events were only rehearsal, and they were trying desperately to get out of Washington in case the embassy staff had been ruled expendable and was about to be expended. There was quite a tumult there in the early morning hours.

Naturally, these seemingly irrele-

vant events made no sense at all to anybody who didn't know that there was a slight difference of opinion between the high military brass in Washington and in Moscow. In Moscow the high brass believed that it was testing the efficiency of its preparations for World War Three. In Washington the high brass was of the opinion that World War Three was being fought.

Not knowing the American view, the Russians were staggered. They were more than that. They were nonplussed. It could even be said that they were obfuscated. Every trick they'd put into rehearsal had been a dismal failure. Beaming, cordial Americans had invariably butted in —protesting politely that accidents happen to the best of us—and bollixed up the work on pretense of being helpful. They elaborately ignored each proof that they'd caught the Russians practicing ways to murder numbers of their fellow-countrymen. The Russians did not grasp that this was a way of making war. It was too much for them.

Their reaction, indeed, was something for which there is no exact term. To call it a "dither" is clearly imprecise. A "tizzy" is a little nearer, and "tantrum" applies—but is still inadequate—while to say that all the high Russian brass ran around in circles, bellowing with rage while simultaneously biting the back of its own neck. . . . That only conveys a sort of general impression. It can be

said, however, that the Russians felt considerable dismay.

On the facts, they were absolutely certain that neither super-duper spying nor Russian traitors accounted for what had happened. Nobody could have known exactly where the *Vishinsky* would surface, to have guns and torpedo-tubes bearing negligently upon it. Nobody could have known where the *Potemkin* would rest on the bottom. Moreover, no spy or traitor could have been sure that he knew all the intended to-be-rehearsed events. But the Americans had been sure!

So the Russians took characteristic measures. As a first reaction, they liquidated their entire working spy system for not tipping them off beforehand. This purge extended from the top policy-making heads down to mere organizers of communist cells in the New York garment district.

It cannot be said that the liquidated spies lost their lives in the war, however. That was Russian politics.

There was just one Russian intelligence agency left, after the firing-squad smoke cleared away. It survived because it hadn't been working. It was in reserve. It wasn't spying yet. It's head was one Igor Oblansky who had spent years in America, developing it. It was strictly intended for last-ditch desperate espionage. But now was the moment for it to go to bat.

Igor Oblansky was summoned to a top-level, utterly secret conference and faced by accusing eyes in bullet heads.

"For ten years," he was told, "you have been drawing pay and cheating on your budget." This was a guess, but it was expected. It was true, too. "Now you produce, or you will be shot and all your subordinates will volunteer for Polar-zone colonization!"

"Da," said Igor Oblansky. That is always the safest thing to say in Russia. To make sure, he said it again. *"Da!"*

"We want to know what the Americans have got!" fumed a general.

"We want to know how they did it!" snapped an admiral.

"We want to be able to do the same!" snarled a civilian who was so powerful that nobody has ever heard of him. As an afterthought he added, "Or else!"

"But this," said Igor Oblansky proudly, "is just what my organization is intended for! I will do my best. I think it will be a good best."

"What will you do?" demanded the civilian, suspiciously.

Igor told them, with a sort of quiet confidence. He had organized his outfit himself. He spoke excellent English. Posing as a refugee, he'd spent two years in Brooklyn, perfecting his accent and knowledge of American ways. Then he'd set out across the country, setting up his network.

"Here I found an ambitious young man," he said with modest pride, "who needed a *Jaguar*. There an in-

telligent young lady who wanted a mink coat. Here a recent college graduate who wanted to get married. There a harassed husband who wanted to get a divorce. I represented myself as a member of their FBI. I explained that they could be of the greatest possible service to their own country if they would accept a certain monthly income—suitable for instalment purchases—for holding themselves ready to take a vacation with pay when called on."

Hard, accusing eyes blinked at him. He smiled, and explained further. Presently the accusing eyes grew less than accusing. Before he finished, some of them were even fond.

"So," said Igor modestly, "I have access to the deepest secrets of the depraved, warmongering American capitalists. My contacts have risen in the world. I will bring back, in person, whatever secret devices our other spy systems did not even suspect."

He consulted his file of recent photographs and went to a plastic surgeon. Then he went by well-established courier route to America. The American records state that he arrived by parachute in mid-Wisconsin, and that an FBI agent posing as a calypso drummer picked him up and gave him a lift to Green Bay. There he took a plane to Washington, and chatted in flight with a Counter-Intelligence man in the seat beside him. The CIA man was passing as a retired weight-lifter. In Washington he had a few drinks with a city detective in plain-clothes, and got rather chummy with the elevator operator in his hotel, who'd been planted in that job for the purpose by the FBI. Casually, deftly, with an impeccable Brooklyn accent, he soaked himself in the feel of current America. After a week, according to plan, he went to Brooklyn.

There he made contact with one Terence Gode, who some years before had wanted a motorcycle and now was beautifully situated for Igor's purpose. He was very grateful for the annual income he'd been receiving with no duties attached. It had bought a sewing machine, a washing machine, a television set and was helping with the payments on a secondhand car. He now worked in the Brooklyn Navy Yard on electronic apparatus. He was a thoroughly patriotic American. So when Igor told him that it was now time to serve his country by letting an FBI man impersonate him—Igor being that guy—he cheerfully agreed. It was what he had been recruited for, and he was anxious to help do anything that would mess up the Commies.

After Igor left him, authentic FBI agents visited Gode and tactfully enlightened him. But in any case, for three nights running Gode instructed Igor in his work, his friends, the layout of the place where he worked, where he kept his tools, and other relevant information. Later, the tape-recordings of these instructions

were warmly commended. Gode got a raise in civil service grade for his co-operation.

But on the fourth morning he went off on a vacation with pay, at Igor's expense. He waved a happy good-by, and Igor took his place in the Navy Yard and the world. For the purpose, Igor removed the disguise he had worn up to this moment, and became what the plastic surgeon in Moscow had made him—a reasonable facsimile of Gode.

When he went to the Navy Yard and displayed his employee's badge, the guard did not blink an eye. He'd been tipped off. Igor went happily to work. Gode's instructions were sound. Igor fitted in beautifully. He performed Gode's duties with remarkable efficiency—but of course he had help. The FBI saw to that. His associates had been asked to give him every possible assistance in his impersonation.

It may be said that technically this was the second phase of World War Three. It lasted for three months. It could have lasted a lot longer, because the more the Russian brass thought things over, the more jittery they got. But Igor didn't feel wholly happy, either. It was the job of the man he was impersonating to make, by hand and lovingly, the top-secret detection and other devices used by the United States Navy. Igor knew all the Russians knew about such gadgets, but the American ones bewildered him. They were out of this world!

There was one which, in a submarine, determined the distance, course, and speed of a faraway surface vessel with absolute precision. There was one which—so Igor learned—detected Russian submarines at a distance of twenty miles, but ignored English, French, and American. There was . . .

The FBI did hold out something. Igor never made a device to locate and identify spies, but he did—and it was later considered a mistake—he did put together something complicated and impossible which detected, spotted, and identified distant vessels, not only for nationality but by giving unmistakable symptoms when a pointer ran down a printed list of ship names.

Such things stupefied Igor. He might have cracked up entirely if such work had continued. But the FBI and the CIA were much too kind for that! He turned out a lot of the Russian-submarine detectors, and then was casually hauled to New London to install them in American subs. He installed them, and they worked. But he began to grow wild-eyed. The gadgets didn't make sense! They couldn't work! But they did! There were no special Russian subs around to check that particular gadget on, but a destroyer took one out to sea, and presently it checked, and everybody was pleased. And Igor went quietly out of his mind. Because every so often a Russian sub did make rendezvous at that spot with a courier-service boat (run by volunteers from the Enemies of Soviet Russia—an organization of descend-

ants of exiled White Russians) and there *was* a Russian sub there. It was supposed to be a secret, but the Americans used it to test their detectors on! And he couldn't figure out how a gadget that gave indications by making a polystyrene plate tacky could even do that, much less find out anything to indicate.

He didn't sleep. He began to get frustrated. At any moment he might start to talk to himself, which would spoil everything because he'd be too upset to remember to talk English. Something had to be done if the FBI and the CIA and other agencies were to dodge catching him. So they did something.

They had Igor make a special, relatively portable Russian sub detector. It was very small. They said it was to go on a fighter-bomber whose cockpit was cramped for space. It was actually small enough to be carried in one's pocket. And when it was just about done, an FBI man called Igor on the phone and said he was Terence Gode's twin brother and was going to be Terence's—Igor's—house-guest for a while. He was very cordial, but Igor couldn't take it. He couldn't deceive a twin brother! (For the record, Gode was an only child.) He had to get out, and fast!

By carefully calculated coincidence, Igor was due to make contact with a Russian spy—it was only a side line with the spy, of course, who actually was a CIA man—only that afternoon immediately after work. Igor contacted him instead of going home. He pulled emergency rank—and it was an emergency. He rushed to a hidden small flying field in New Jersey. He was smuggled into Canada with splendid co-operation from the Canadians. He got on the next transatlantic plane to leave Canada so secretly that only the Canadian police, the FBI, the CIA, and the pilot, co-pilot, flight engineer, stewardess and two passengers knew about it. And he got to Moscow in due course, tenderly shepherded on his way by divers counterespionage operations. When he landed safely with a top-secret military device in his possession, the people who had watched over him threw a party in celebration. They'd done a magnificent job. They'd made Igor the second-most-successful spy in history. He ought to be a hero, in Russia.

He was. For just about twenty-four hours. Then he was summoned to a top-level, top-secret conference. Hard eyes in bullet heads glared at him. There were generals and admirals and a civilian so powerful that nobody has ever heard of him. There were bearded, unhappy Russian scientists there, too. They wanted to ask questions. Many of them. They all summed up: "What the hell?"

Igor answered, at once humbly and proudly. He'd brought back the most important and most secret of all American secret devices. He didn't know how it worked, but it did. He could prove that! It was up to the scientists to understand it and de-

velop its principles into other secret devices.

He did prove that the Russian sub detector worked. It worked magnificently—picking out, locating, and telling course, speed and submerged depth of any Russian submarine within twenty miles. It even located a sub on the ways, not yet launched and not more than half completed; also a Russian warship twenty-two and three-tenths miles distant from the shipyard. But it wouldn't detect anything else. Igor made scads of them, and they all worked beautifully —on Russian subs. But when one of those detectors was mounted on the *Krokodil* and sent into an English harbor where British subs lay on the surface beside their mothership—it didn't work at all.

The Russians had him make hundreds of such gadgets. He did. They worked—detecting Russian submarines. But the scientists took them apart and put them together and they didn't work any more. . . .

This was the last, third phase of World War Three. The Russians were not pleased. They questioned Igor, and they threatened him, and they put him in jail to find out what he did when he made a submarine-detector that would only work on Russian submarines. When other people made them they didn't work —not that Russians wanted to detect their own submarines! But Igor made them so they did work. How?

He tried desperately to persuade them he didn't know. Presently he was trying even more desperately to find out so he could tell them. He began to eliminate every possibility. And when he had tried everything and his brain told him he couldn't possibly make such operating machines—he couldn't. And this appeared to Russian officialdom to be blatant treason.

In the end he was given just two days to come clean or be shot. He didn't. He couldn't. So they shot him.

At just about this time the American Air Force demonstrated a new gadget just developed. It was a lovely thing. They showed it in a sort of joint exhibition to all America's allies, with spies from non-allies not excluded. It was a computer to set the controls of a rocket for a distant target. It would intercept and smash any guided or ballistic missile up to five hundred miles distant and out of atmosphere. Allied rocketeers were invited to try to beat it. They did try. They sent rockets at a target area from every possible distance and angle. Not one landed. The thing worked! It is rather likely that this device broke a few Russian hearts. A spy in their rebuilt espionage system got at one once. He took back photos, plans, and instructions for operation. But when the Russians made them—they didn't work.

This was the conclusion of World War Three. It wasn't at all dramatic. The Russians simply gave up. The rest of the world could bomb them,

and they couldn't bomb back. The rest of the world could spot their subs, and they couldn't spot back. There were other items, too . . . The entire top level of Russian scientists was liquidated four times in succession, but the only result was to keep anybody from wanting to be a Russian scientist. So ultimately the Russians had to decide to coexist or be smashed—if they'd be allowed to coexist.

They were. They got quite peaceful, after a few dozen years. They even quit being Communists. They got tired of not having enough to eat.

So World War Three passed into oblivion instead of history, and the Russians didn't even know that it had been fought, and they'd lost it, until a long, long time later, when the Historical Section of the Navy put out a volume entitled "History of the Psionic Devices Division of the United States Naval Research Laboratory." It didn't make much of a stir, at that. Most people take psi for granted, like electricity, and don't try to go too deeply into it.

It's too bad. It's had its effect on history. World War Three was a psionic war, instead of an atomic one, and people ought to realize it.

THE END

THE ANALYTICAL LABORATORY

Competition for position this time was a little on the tough side. Just to repeat for readers who may not have gotten the data, the points and their significance, in our Lab here, is as follows: Reader votes for place are tabulated, a vote for first place counting 1, and so on so that a fifth place vote counts 5. The points each story collects are then added, and divided by the number of votes, to get the point-score. Low point score is the winner.

The story the readers vote into first place earns a 1¢ a word bonus; second place is worth a ½¢ a word bonus. If some author does you the favor of giving you some solid entertainment . . . do him the favor of voting his story up for a bonus.

The system admittedly has certain imperfections; we have to compromise between the theoretical ideal and the engineeringly attainable. Admitted imperfection: in one issue, we may publish an All Time Classic Great of the kind that comes along once in a decade, and a Grade A #1 yarn of the once-in-a-year level. So the author of the Grade A #1 yarn gets rated with a #2 story, where he'd have made #1 in almost any other issue. Tough . . . but darned if I can see any practical way out.

(*Continued on page* 138)

ALL THE KING'S HORSES

BY ROBERT RANDALL

There are reactions which, once triggered, can neither be halted, altered, nor reversed, until they've run their course. On Nidor, certain individuals had done certain things... and thought they acted in full free will....

Illustrated by van Dongen

Nibro peSyg Sesom, newly-elected Elder Grandfather of the Clan Ghevin, paced uneasily through the narrow corridors that circled the Kivar Temple in Holy Gelusar. He walked with a firm stride, scowling impatiently, waiting for word to come that his fellow members of the Council had finally assembled.

Nibro had reached the first of his goals—Council membership, at the unprecedented age of thirty-three. But his real work lay ahead of him.

There was something dank and foul in the air, he thought, as if the night rains still fell. Nibro peSyg turned to the short, stooped Nidorian at his side.

"Gwyl peDrang, remind me to have decent ventilation installed when the Great Temple is rebuilt."

"Decent ventilation. I'll make a note of it, Grandfather Nibro."

"Make sure that you do. I think if I had to spend the rest of my life inside this relic of antiquity I'd leave the priesthood and go back to engineering," Nibro peSyg growled. "I don't know how the Elder Grandfathers stood this place so long."

"They had no choice—until *you* reached the Council," Gwyl peDrang said tactfully. "Ever since the Great Temple was destroyed—"

"I know," Nibro peSyg said. He paused, leaning over the edge of a window, staring out into the city. It was mid-morning; the Great Light was climbing high, its bright rays diffusing through the pearl-gray cloud layer that covered Nidor. Impatiently, Nibro scratched the yellow-golden down on his corded right arm. "They haven't been able to afford a new Temple," he said. "Well, that's all over with now. *I'll* see to that. Great Light knows how they've stood it so long."

"I don't know either, Grandfather Nibro."

Nibro peSyg wheeled sharply and glared at his companion. "And stop that 'Grandfather Nibro' stuff. That was all right when I was a minor priest in Sugon. Now I'm the Elder Ghevin, and keep it in mind."

"I'm sorry, Elder Ghevin," Gwyl said quickly. "Force of habit, I guess; it's hard to remember that you're not a Sesom any more."

Nibro detected a certain note in the man's voice. He smiled and said, "I could hardly have remained a Sesom and been elected to the Council, could I? There already is an Elder Sesom. What's the matter? Getting sentimental over those meaningless Clan names?"

"Oh, no! I just—"

His protestations were cut short by the deep, sonorous crash of a gong in the main auditorium of the little temple.

"The Council is gathering," Nibro said. "Give me my cloak."

Gwyl took the blue cloak which he had draped over his arm and put it around Nibro's broad shoulders. The new Elder Ghevin fastened the metal gorget at his throat, shrugged his shoulders so that the cloak draped properly, and turned around.

"How does it look?"

Gwyl smiled approvingly. "Fine, Gran . . . Elder Ghevin. Just fine."

"Good. Now you get busy with that list I gave you. Make sure my stuff is moved into the office by this afternoon. I've got a speech to make."

He turned and strode toward the main auditorium.

An acolyte stood outside the heavy bronze-ornamented door, his nose superciliously aloft as Nibro ap-

proached. "The Elders have gathered," the acolyte said. "They await you within."

Nibro peSyg nodded. In a sense, Nidor had been waiting for him a long time—thirty years, now. The Elders could wait a few minutes. "Are they all there?"

"Yes, Elder Ghevin." The acolyte squinted at Nibro obliquely, with much the same expression Gwyl had used. The look seemed to suggest there might be something wrong about a member of the Clan Sesom metamorphosing abruptly into a Ghevin.

Nibro wondered momentarily if he had made a mistake by forcing his way into the Council in this unorthodox way. He tightened his lips and banished the sudden doubt. He had seen the opportunity, and he had taken it. Why *shouldn't* a man change clans, if he had a good reason for doing it?

He glowered at the acolyte. "Open the door."

The acolyte threw open the heavy door. Nibro peSyg stalked in.

The other fifteen Elders were in their time-ordained places, seated in a wide semicircle facing the door. Behind them, the ceiling aperture allowed the rays of the Great Light to enter—feebly.

The lens in the Great Temple must have been a thrilling sight, Nibro thought. *I wish I had been old enough to see it before its destruction.*

He glared at the fifteen. They were old men; *they* had seen the Temple. Their golden down had turned light silver with age.

His gaze rested on the empty seat at the far left—the seat that now belonged to him, as the Elder Ghevin. Next to that sat the Elder Lokness, next to him the Elder Yorgen, and so on across the dais to the Elder Brajjyd at the far right.

Old dodderers, Nibro thought contemptuously. His eyes caught those of the Elder Lokness—the one Elder who had opposed Nibro's spectacular rise to the Council. Nibro smiled mockingly at the man.

The Elder Vyless, oldest and wisest member of the Council, rose and peered down at Nibro. "We welcome you to our midst as a member of the Council," he said.

Nibro smiled. "Good. I wouldn't want to stay where I'm not welcome."

"You have sent word you wish to address us, on this your first day of Councilhood. Is this true?"

"It is," Nibro said. He struck a conscious pose in the center of the floor, swelled his deep chest, pulled his big body erect. He was an imposing figure, and he knew it. "I have waited for this day all my life," he said ringingly. "The day I could stand before the Council of Elders as an equal, and speak my mind."

"We know you will be an asset to us," old Vyless said.

Nibro folded his muscular arms. "Fellow Elders of Nidor, I have a very serious topic to bring before you today. Some of you—those who spoke with me at length before my

election—are probably aware of what it is I'm about to say."

He paused for a moment. "It is thirty years since the Great Temple was destroyed. Thirty years since disaster swept over our world, since the madness wiped the Bel-rogas School from our midst, drove the devil Earthmen back to the skies, brought the Temple down in flames. And thirty years in which the Council of Elders has convened in this subsidiary temple, this . . . this little shed not fit for stabling deests!

"An entire generation has grown up—*my* generation, fellow Elders—that has never seen the Great Temple, never known the thrilling sight of the Great Light cascading down from the mighty lens. And, I may add, has never felt the true grandeur and nobility of our way of life. We lack a focal point for our existence. The Way of our Ancestors is shattered, and must be rebuilt. The Temple—at the heart of Holy Gelusar—is still a blackened ruin!"

"And you propose that we rebuild it," interjected the Elder Lokness dryly. "I think we've been through this before, young man."

Nibro glanced angrily at the Elder Vyless. "Please request our brother of Lokness to hold his patience until I have finished speaking. *And* to address me with the respect due a member of the Council."

Lokness subsided, muttering bitterly.

"You may continue," the Elder Vyless said.

"Very well. Almost two cycles ago, in the great cataclysm that swept our world, the Council of Elders was reduced to a subsidiary role for the first time in the history of Nidor—for the emergency, it was said. A secular authority arose, the Directorate—represented now by that nonentity in Tammulcor, Ganz pe-Del. Fellow Council members, *the emergency is long over*—and still a Director rules in Tammulcor!"

He glanced from face to face. The Elder Sesom was beaming broadly—as he had every right to do, being Nibro's chief mentor. Yorgen, Danoy, Dmorno, and Hebylla, Nibro's main supporters, were smiling. The others seemed in internal conflict.

"You must remember one of the early acts of the Director when affairs stabilized after the destruction of the School and Temple," Nibro said carefully. "He taxed the banks—and built five new schools. Money for schools—and not for a Temple!"

"The Council in office at that time permitted the expenditure," Lokness said.

"The Council of that time was under the thumb of the Director!" Nibro roared. "The Elders had been chosen by the Director and his cohorts, if you will be good enough to recall. The Council was packed by illegal means." He paused; he realized he had better not press *that* point too hard.

"Very well," Nibro said. "Thirty years have passed. The Council has once again attained a measure of

freedom—and the weakness of the Director in Tammulcor is known to all. Let us tax the banks once again—and rebuild the Temple!"

There was a moment of stunned silence in the auditorium. Nibro had finally phrased the dream of every priest since the destruction of the Temple—and the words hung nakedly in the murky air.

Slowly, they seeped in.

"Just a minute!" Lokness thundered. He rose from his seat. "I think you've got an almighty nerve, *Elder* Ghevin! You come in here, untouched by the silver of age, scarcely half a day since you were elected to this august body, and presume to order us around and tell us what to do.

"The late Elder Ghevin was Elder Leader, but don't think that you lead the Council just because you have . . . ah . . . *taken* his place." The emphasis on the verb was hardly subtle.

Nibro smiled coldly at the thin-faced Elder. "A very good point, and one which we may as well decide right now. Since the Elder Leader's position is now vacant and the Council leaderless, we must elect a new one. Have you any suggestions?"

Lokness opened his mouth to say something, but the Elder Sesom beat him to the punch. "I say it should be the Elder Ghevin."

Lokness' mouth stayed open for a moment, then snapped shut as he darted his eyes around the Council.

"Ghevin," agreed Brajjyd.

"Ghevin," repeated Yorgen.

"Ghevin," said the Elder Vyless, who had been the chief candidate for the post before Nibro's sudden propulsion into the Council.

When it was over, nine were definitely arrayed on Nibro's side. The Elder Dmorno attempted feebly to place Lokness in the running, but nothing came of it, and when no second was forthcoming he switched to Ghevin. After that, it was a landslide.

Shattered, Lokness sank back in his seat. Fourteen votes had been cast.

"Your vote, Elder Lokness?"

For a moment Lokness said nothing. Then, softly, he spoke—one word.

"Ghevin."

The fifteen Elders turned, then, and looked at the new Elder Grandfather Nibro peSyg Sesom Ghevin, Elder Leader of the Council of Nidor at the age of thirty-three.

Nibro looked well satisfied with himself. "Very well," he said. "Let us proceed with the business at hand. I mean, of course, the Temple."

The Temple must be rebuilt. *Must* be. Nibro peSyg had known that ever since he had been old enough to realize what the trouble was with Nidor.

Nidor was a single small continent surrounded by an endless sea. A layer of clouds cloaked the planet without break, hiding the bright sun and providing only the warm glow

known and worshiped as the Great Light.

Ever since the legendary Cataclysm of four thousand years before, the people of Nidor had lived together peacefully, quietly, in utter stability, governed by the Law and the Way of the Ancestors.

Until the Earthmen came.

With the coming of the Earthmen, a hundred thirty-three years before, Nidor had entered into an era of unrest and trouble, of doubt and ambivalence.

The Earthmen had been accepted as emissaries of the Great Light by the priesthood that ruled Nidor; they had founded a school, the Belrogas School of Divine Law, and for a century had taught Nidor's finest minds at their school. And with them had come the Plague of the Hugl, the economic failure of the Edris-makers, a curious crumbling of Nidor's most hallowed traditions, and then the Great Panic caused by the overproduction of peych-beans, Nidor's staple crop. Like a series of body blows to the Nidorian civilization, each had left its bruising mark.

And then, after a hundred years of their interference, the Earthmen had been driven off Nidor by an army led by the Great Martyr, Kris peKym Yorgen, who had shown the Earthmen up as the demons they were.

Kris peKym had not lasted long as Director; he had been struck down by an assassin's bullet not long after taking control of Nidor away from the Council. But his successor, Ganz peDel Vyless, had taken over smoothly, and begun rebuilding. For the first twenty-five years, he had done well, but his evident grief over the death of his Secretary, Norvis peKrin Dmorno, had reduced him to a useless nonentity five years before.

Now, reasoned Nibro, it was time the Council of Elders reasserted their age-old prerogative and took control of the government away from the Directorate.

The time of troubles was over; it was time to return to the Way and the Law.

After all, the Directorate could not function without the Council, could it? No law or edict was legal until it had been passed by the Council of Elders.

For thirty years, however, the Council had been packed with yes-men for the Directorate. But now that the Directorate was useless, that was no longer so. The Council could —and *would*—rule Nidor without its aid.

And the first thing to do in reasserting the power of the priesthood was to remind the peoples of the Five Provinces of their religious duties—and of the unquestionable spiritual leadership of their priests.

The Great Temple of Holy Gelusar, which had stood for four thousand years until its gutting by fire thirty years before, would again become the spiritual center of Nidor, just as the Holy City of Gelusar was its economic center.

After the new Elder Ghevin had

spoken, the Council deliberated—for all of five minutes.

And the project was begun.

Within three weeks, the orders had gone out. The people of Nidor had been told of the glorious project and had been exhorted to aid and support the rebuilding of Nidor's greatest and most honored monument to the supernal glory of the Great Light.

And, at the end of the third week, a visitor came to the small Kivar Temple where the Council had its offices.

Elder Leader Nibro peSyg looked up from his desk as he heard the timid rap of one of the acolytes at the door of his office.

"Yes? What is it?"

The door opened and the young acolyte stepped in. "There's a man to see you, Elder Leader," he said. There was an odd expression on his face.

Nibro scowled. "A man? That doesn't tell me much. Be explicit. What is his name and business?"

"He says . . . he says he's the New Lawyer."

Nibro peSyg's eyes narrowed. For more than two cycles, a man calling himself the New Lawyer had been going about the country, preaching a return to the honest worship of the Great Light. But, although he had never come out against the priesthood directly, his teachings tended to undermine the authority of the Council of Elders.

"What's he like?" Nibro asked.

The acolyte gestured uncertainly. "I don't know. He seems harmless. Gives blessings as though he were a priest. I told him you had more pressing business, but he told me to announce him immediately."

"And you obeyed," the Elder Leader said. "That's rather presumptuous, isn't it?"

The acolyte swallowed. "He . . . he said he had news of a rebellion and would speak only to you."

Nibro thought a moment. He really had no time for every stray country preacher who came along, but this one might prove amusing. Besides, if he had information—

"Send him in," Nibro said.

The acolyte closed the door behind him. A few minutes later, it opened again. Nibro looked up, ready to give a tongue-lashing to whoever had opened the door without knocking. He never gave it.

Before him stood a true Elder. He was tall and lean, almost gaunt, without an ounce of superfluous flesh on his body. The down that covered his body was still of normal thickness, but it had become a pure silvery white. There was an unsettling stern brilliance about his fixed eyes as he stared at Nibro peSyg.

He was old. More than that—he was ancient. He looked as though he had seen everything and done everything and knew everything. Nibro had the peculiar feeling that the old man was laughing at him, although there was no smile on the wise, aged face.

"You are the Elder Ghevin?" he

asked. His voice was a deep bass that would have been a credit to a man of thirty.

"I am," Nibro answered. "And you are the man who calls himself the New Lawyer."

The oldster nodded silently and closed the door behind him. When it was closed he said: "Others call me the New Lawyer, Elder Ghevin. I call myself only Bel-rogas peBel-rogas Yorgen." He wrapped gnarled fingers about his staff and looked steadily at Nibro.

The old man had a nerve, Nibro admitted to himself. It would take nerve to call oneself by the name of the legendary Bel-rogas Yorgen who, four thousand years before, had written the Law and part of the Scripture.

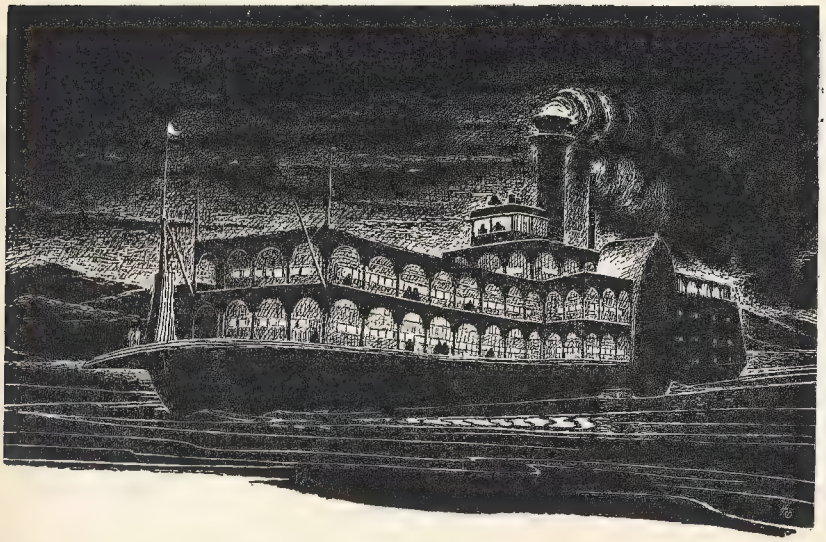
"A flamboyant name, Ancient One," he said. "But I doubt whether it is your own."

"Perhaps not," said the New Lawyer, "but I have as much right to it as you have to yours."

Nibro frowned. The old man wasn't quite clear—was that an insult or . . .

The old man strode across the room to stand in front of the Elder Ghevin's desk. In one hand he carried a long bronzewood staff, but it was obvious that he didn't need it for support. His robes were cut like those of a priest, but they were dead black instead of the blue which symbolized the color of the sky that surrounded the Great Light at midday.

Nibro leaned back in his chair, realized that it looked as though he were shrinking from the aged one,



and leaned forward again. He started to say something, but the Lawyer's voice cut in.

"What my name *was* no longer matters—nor does yours, Elder Ghevin. True, I went under another name when I studied with the Earthmen, these three cycles past. Now, however, I call myself what I please."

"Well enough," said the Elder Leader. "Now, what do you want with me? I have very little time."

The oldster's glittering eyes met Nibro's. "Just a chat. As one great leader to another."

"You presume, Bel-rogas peBel-rogas."

"The privilege of age," said the New Lawyer. Casually he asked: "How is your new project coming? Having forced an issue in the Council by bribery and blackmail, how have you done with it thus far?"

"What . . . how did you—?" Nibro clamped his teeth shut to keep from sputtering.

"About the blackmail? I know many things," the New Lawyer said sonorously. "But enough. Let us get back to the rebuilding of the Temple. You intend to go through with it. But you will fail, Elder Ghevin. And you will *not* re-unite Nidor."

Nibro spluttered angrily. "I won't? Is there any doubt? Once the Temple is rebuilt, the people will return again to Holy Gelusar as the center of worship. And I *will* rebuild it; I shall—"

"Who pays?" the old one interrupted.

"The people will contribute as they feel urged to do so by their devout consciences. And the Banks will be instructed to adjust their interest rates so that a greater surplus will be accumulated. The surplus will be turned over to the Council for the purpose of the Temple." Nibro felt vaguely angry at the old one and at himself. He had been put on the defensive and had accepted the role.

A strange smile appeared on the silver face. "You see no farther than the end of your nose, Elder Ghevin. You see today. You do not look at yesterday, and you cannot see tomorrow."

"Tomorrow hasn't happened yet," Nibro snapped in irritation.

"No, Elder Ghevin. But it will happen. And you are powerless to stop it."

Nibro shrugged. "I am powerless to stop tomorrow from happening. I cannot prevent the Great Light from showing His face. But what I do today will have its effect on tomorrow. Surely you agree with that."

"Oh, indeed," agreed the Lawyer. "But keep it in mind that what happened yesterday affected today."

Nibro patted the ends of his fingers on the desk in a gesture of irritation. "You speak in circles, Bel-rogas peBel-rogas. I have little time. Come to the point."

The stern old face did not change. "I know what I know. At the Bel-rogas School, I studied the anatomy of animals and of men. I looked at

their tissues under a microscope. I know how they are built and what causes them to grow and evolve—and die.

"Living things are composed of cells, Elder Ghevin. And societies are composed of people. There are similarities, Elder Ghevin — great similarities."

"What in the Holy Name of the Great Light are you talking about?" Nibro said exasperatedly. "I think you had better leave. You're wasting my time."

The end of the New Lawyer's bronzewood staff struck the tile floor resoundingly, making Nibro jump. "I will say what I must say, Nibro peSyg! Listen attentively, so that as much as possible will seep into your well-armored brain!

"I see into tomorrow and the day after tomorrow. I see that and more." He grasped the bronzewood staff with both gnarled hands and leaned forward a little. His voice became softer, almost confidential.

"You know what you're going to do, Elder Ghevin? You're going to have trouble. You'll find that the people won't contribute nearly enough for this project, so you'll put too much pressure on the Banks. None of them will like it. One of them will rebel—refuse to pay.

"So you'll do the obvious thing. You'll get yourself an armed group of men. You'll take the Hundred Men, since they are the most available. And then you'll march to the rebelling province only to find that they resist with greater energy than you expected. More than that, you'll find that the other provinces will pick up the idea. If one can rebel, then all can. And you'll be left with nothing, Elder Ghevin."

"I will, will I?" Nibro's voice held contempt. "And now that you've warned me, what is to prevent me from doing just the opposite?"

"You, yourself," said the ancient succinctly. "You've started it; you'll have to carry it out to the very end. In the first place, you don't believe me; therefore, you will go on with your plans. You will ignore me and pay no attention to my warning."

"In that case, why warn me?"

"Because that enforces it. You will continue your course because you cannot admit that an old fool like myself is right. So you will go on and on, doing your best to prove me wrong." His smile became irritatingly superior. "Even the explanation I just gave will have its effect, you see. Up to a certain point, the process of prophecy is cumulative with a mind like yours."

"You're completely mad!" said Nibro vehemently.

"You think all who tell you the truth are mad. I have simply told you what the consequences of your actions will be. And you'll ignore me. And you'll think you have gone on as though I have never been here.

"But good prophecy brings its own success. You see, what you are doing is really the best course in the long run. I take the long-range view. I see what is going to happen and

what *should* happen. And you are the instrument.

"You have a role in the game that's unfolding, a great and important role—play it, Nibro, play it!"

Nibro stood up, his fists clenched. "You have raved enough! Get out of here before I have you thrown out!"

The New Lawyer inclined his head the barest fraction of an inch. "I have said my say, Elder Ghevin. I go."

He turned and walked regally to the door. He had it partly opened when Nibro called after him.

"I'll have you know, old fool," he said caustically, "that I can and will do what I want to do, and no one will tell me differently. I am the Elder Leader, not you. I will do things *my* way, not yours. I will do exactly as I please!"

The old man turned slowly to face the desk again. There was a sardonic smile on his lips. "I know, Elder Leader. That's exactly what I said you would do."

"Get out!" snarled Nibro peSyg. *"Get out!"*

Korvin peKorvin Danoy grinned wryly as he looked over his books—the *real* account books, not the ones he kept on hand for priestly busybodies to read.

As Keeper of the Bank of Sugon, it was his duty to see that the interest on the money loaned out minus the interest on cobalt deposits was kept at the proper level. Well, he admitted to himself, it had been kept at a proper level—proper for *him,* that is. The profit, minus his salary, was supposed to be sent by courier south from the northern province of Sugon, over the Ancestral Mountains, to the priestly treasury in Holy Gelusar.

The books before him indicated as a matter of record that the money sent south wasn't exactly what it should be. In fact, it was a devil of a lot less.

He closed the heavy ledger, sighed, stood up behind his desk, and turned to look out the window at Lidacor, the northern province's largest seaport and leading city.

He was somewhat shorter than the average Nidorian, fortyish, with a pronounced paunch that stretched his green vest-coat in front, and a faint touch of silver-gray in the golden body-down that covered his skin. His stocky face reflected quiet humor, but his dark amber eyes showed shrewd, calculating intelligence.

The city itself had changed in the past several decades. It was not like the southern seaports. Sugon's soil was rocky, and made poor farmland; most of Sugon's wealth had come from mining — metals, building stone, and gems. And, of course, the manufacturing that had begun since the Lidacor School of Engineering had started to turn out graduate technicians. Here and there over the city, several chimneys poured out wood smoke from the fires that drove the factories' steam engines.

Sugon, poor in farm resources, had found a way to supplement its

income—thanks to Korvin peKorvin. He was a well-loved man in Sugon, a public benefactor. Priests and people alike hailed him on the streets; he had diverted money into the expansion program of the Temple of Lidacor; he had aided in the growth of the Sugon School of Divine Law and Sciences; he had immeasurably increased Sugon's wealth and standard of living to cover his thoughtful mismanagement of Bank funds.

No one would begrudge him the few weights of cobalt that now and then found their way into his own pocket.

Wearily, he picked up the phone that connected with the outer office. "Has that priest from Gelusar come back yet?"

"Yes, Korvin peKorvin," his secretary's voice said. "The Grandfather is waiting in the vestibule for you. Should I send him in?"

"You might as well," Korvin peKorvin said.

There was no reason why a priest from Gelusar should have come up at this time of year. Six months ago, one of the Council's lackeys had brought word of the new edict handed down by the Council and signed by the Elder Ghevin. The loan interest rates had been raised, and the deposit interests had been lowered.

Korvin peKorvin Danoy had obediently promulgated the change in rate—little as he liked it—and had juggled the bank's books and accounts in such a way that life proceeded as usual in Sugon.

Two months before, he had sent the quarterly tithe to Gelusar. He had not expected to hear from the Council for another month yet.

The door of his office opened. A square-shouldered young man in a priest's blue tunic entered. His body-down was coated with road dust; he had ridden long and hard it seemed.

Some day, Korvin thought, *we'll build a railroad across the mountains, like the one they're building between Gelusar and Sundacor.*

"What can I do for you, Grandfather?" he said aloud.

"My name is Drelk peShawm Brajjyd," the young priest said. "Are you Korvin peKorvin Danoy, Keeper of the Bank of Sugon?"

"That's my name, Grandfather," Korvin admitted amiably. "And my title. Have a good trip from Gelusar?"

"Not very. The road was dry—as you can see from the half-ton of dust I've picked up."

"*You* must have been dry, too," Korvin peKorvin remarked. "My secretary tells me you arrived half an hour ago, while I was out—and, seeing I was out, you set off in search of the nearest place of refreshment. I think you'll find our peych-beer poorly, Grandfather; Sugon is not noted for its agriculture."

"Enough conversation," the priest said. His voice was hard and cold; Korvin peKorvin eyed him uneasily, wondering what was coming. "I have been sent by the Elder

Ghevin, in whose retinue I count myself."

"Ah, yes; I'm acquainted with him. Nibro peSyg Sesom was born right here in Sugon."

"Nibro peSyg *Ghevin*." An ugly expression crossed the priest's face. "As you probably are aware, the Elder Ghevin is engaged in the task of rebuilding the Holy Temple at Gelusar. This requires money, Korvin peKorvin."

"I'm aware of that. I deal in money."

"Six months ago, there was an adjustment in the interest rates of the five Banks," the priest went on. "In four of the provinces, there was an immediate and noticeable increase in the revenue derived. In Sugon, sorry to say, we noticed only a slight upturn—one which scarcely reflected the change in interest rates. Do you follow me?"

"With incredible clarity." Korvin peKorvin sat stiffly behind his desk, waiting. His nerves were tense, but he tried to maintain an outward appearance of calm. He had a fairly good idea of what was coming. He wondered how he was going to get out of it.

The priest frowned at him severely. "Without any prejudice against you or your bank, Korvin peKorvin, we decided to send an investigator to Lidacor to confer with the Uncle of Public Records there and . . . ah . . . examine your books. Our investigator returned to Gelusar last week in great confusion."

"Oh?"

"It seemed that the books you had on deposit at the Uncle of Public Records made no sense," the priest said crisply. "They were fine-looking books, neatly written, well bound. But when one added the columns, made totals, performed subtractions"—the priest wrinkled his forehead—"there were, shall we say, inconsistencies?"

Korvin peKorvin said, "Do go on."

"The investigator's report was so confused that the Elder Ghevin chose someone higher in his retinue to conduct further investigation. Me. I spent this morning with the Uncle of Public Records, going over the books you've placed on file with him." He shook his head pityingly. "Those are *very* eccentric books, Korvin peKorvin."

"Are you suggesting that there have been irregularities in my—"

"I suggest nothing. I merely want explanation."

Korvin peKorvin felt sudden dizziness. "On such short notice, I'm afraid—"

"Of course. I didn't expect you to reply immediately," Drelk peShawm said. "I'll give you a night to prepare your statement. I'll return tomorrow." The coldness of his eyes left little doubt that he was looking forward to the next day's interview with sadistic glee.

"Many thanks, Grandfather," Korvin peKorvin said humbly. "I'll endeavor to alleviate your confusion."

"Light's blessings," the priest said curtly. "This door out?"

After the young priest was gone, Korvin peKorvin sat quietly, drumming his fingertips against his desk, trying to organize his plans.

So Gelusar had caught on, eh? Well, it had been bound to happen, and he was half glad it had finally come. Gelusar and its tithes had been draining Sugon long enough; the province could not really afford to support a priesthood in the remote central province on its meager income.

The immediate problem was burly young Drelk peShawm, emissary of the Elder Ghevin. *These tough young Gelusar priests,* Korvin thought reflectively. *They need to be taught a lesson.*

He smiled and tapped his ledgers. He'd be ready for Drelk peShawm, when he returned.

Nibro peSyg Sesom, Elder Ghevin, stood silently on the edge of the littered Square of Holy Light, watching the workers clear away rubble and clean the black soot from stone which had not been cracked by the heat of the burning thirty years before. On either side of the Elder stood a tall, sharp-eyed priest, one of the numerous ones Nibro peSyg had enrolled in the priesthood since his own accession to power. Each had a heavy handgun in his belt, hidden by the folds of the blue tunics they wore.

Nearby stood Gorm peFulda Hebylla, Gelusar's Uncle of Public Works, who was supervising the rebuilding.

Slowly but surely, the Great Temple of Holy Gelusar was coming to life again. It would not be long now, Nibro thought, before throngs swarmed the Square, before the Great Light glittered from the mighty lens, before once again the priesthood held sway in Gelusar as it had done before the coming of the Earthmen and the coming of the chaos.

Back—back—

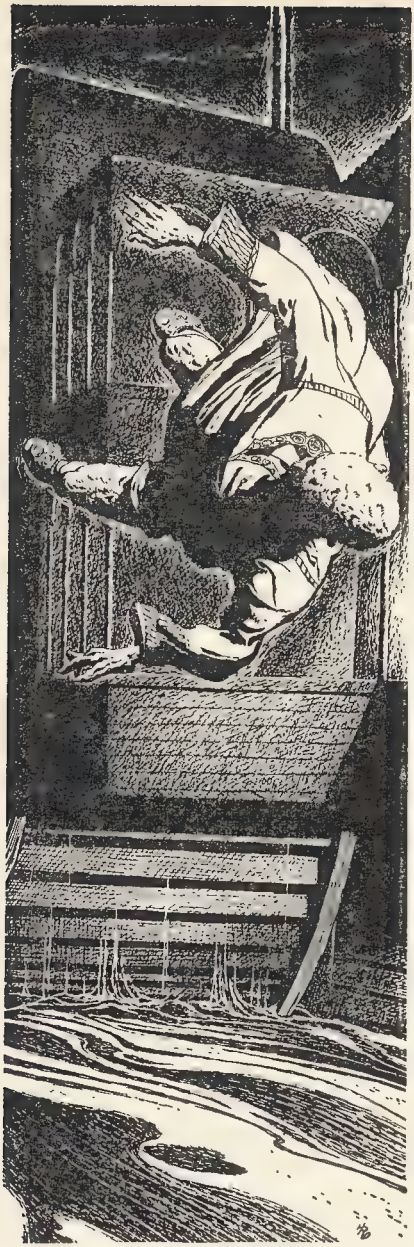
Nibro smiled confidently. It would be as it had been, despite the gloomy fulminations of that old madman the New Lawyer. The Temple was going to be rebuilt, wasn't it? Despite the New Lawyer's prophecies, there would be no catastrophe. The plan was smooth.

One thing troubled Nibro, though. Bel-rogas peBel-rogas was a potential troublemaker; not long after their interview, Nibro had decided to have the Lawyer picked up and put out of circulation, lest his "prophecies" disturb the people. But Bel-rogas peBel-rogas had disappeared somewhere out Thyvash way, and there was no finding him. Nibro had a team of priests on the New Lawyer's trail even now—so far, without success.

He turned to the Uncle of Public Works.

"Have any more pieces of the Great Lens been found in the ruins?" Nibro asked the Uncle.

Gorm peFulda shook his head. "No, Elder Leader. Evidently the



heat cracked it, and when it fell it hit the stone floor good and hard. That finished the job. The seven pieces we found were all there were."

Nibro thought for a moment, then said, "Find nine more pieces. Of any size; it doesn't matter. I think it might make good propaganda if we could tell the people that the new Lens was made from sixteen pieces of the old—symbolic of the Sixteen Clans."

"But—"

"Find them!"

"Very well, Elder Leader. We can find them."

The Uncle strode off toward the area where the men were working on the Temple.

Nibro smiled to himself. Even if the Uncle never did find the pieces, it would be reported that they had been found, and that was all that was needed.

He strode up and down, impatient for the rise of the new Temple, urging a workman on with blunt, snapped commands, doing everything but actually taking part in the work himself. That, for an Elder Leader, would be unforgivable—though he longed to lend a hand himself. Anything to speed the task of rebuilding.

"Elder Ghevin, could I have a moment?"

Nibro turned. It was his Chief Acolyte, Gwyl peDrang. The smaller man had a somewhat worried expression on his face. Nibro stepped out of earshot of his guards.

"What is it, Gwyl?"

"Trouble."

"Eh?"

"Elder Lokness," Gwyl said. "He's taking the boat downriver to Tammulcor this afternoon. That's definite."

Nibro nodded. "It doesn't overly surprise me. He and Director Ganz used to be quite friendly." He put one foot up on a fragment of stone and leaned forward, peering anxiously out at the city. He nibbled his lip. "What did your spies say?"

"Lokness hasn't had a chance to reach the Director yet. Our men have done such a good job of blocking him off that he's decided to go in person."

"He's had no contact at all with Ganz?"

"I'm pretty sure none of his personal messages have gotten to Tammulcor. And I'm completely sure that the phone lines have been down between here and there all week."

"Good. Let me think, now."

Nibro scowled and tightened his lips. Lokness had sent quite a number of messages to Director Ganz peDel Vyless, and all of them—Nibro hoped—had reached no farther out of Gelusar than the office of the Elder Leader.

The Elder Lokness was trying to warn Ganz that Nibro peSyg was usurping his power. That was obvious. Ganz, thus far, had ignored what the Council was doing, but if Elder Lokness succeeded in stirring him up, the Director might yet prove troublesome. Nibro knew only too well what had happened thirty years before, when the Great Martyr Kris peKym Yorgen had ridden into Gelusar with his Hundred Men.

"So he's going himself, eh?" Nibro thought aloud. "Well, excellent. It is not our business to hinder the comings and goings of an Elder of the Council. He'll undoubtedly go incognito, sneaking out quietly so that none will see him leave." He paused for a moment, then added in an ominously flat tone, "I sincerely hope the Elder Lokness meets with no *accidents* on the river packet. Eh?"

He stared meaningfully into Gwyl peDrang's gray eyes. The little man seemed to shiver a little as the Elder's deep eyes bored into his, as if he did not like to recognize what he saw there. Then he nodded.

"I understand, Elder Leader."

The riverboat *Krand II* paddled its way with slow dignity through the murky night, its huge, powerful sidewheels churning the dark water of the mighty Tammul River into streams of white foam.

The gentle rain that fell nightly on Nidor pattered thumpingly on the awnings that covered the main decks, but its soft sound was drowned out by the throb of the big steam engines and the splash of water as it cascaded from the giant paddlewheels.

Inside the lounge, a quartet of musicians was playing, improvising freely on traditional folk melodies. The soft tootling of a zootibar mingled with the high silvery vibrations

of the quiodets. An enthusiastic group of passengers was gathered round, stamping their feet in approval, murmuring occasionally when a particular fine bit of contrapuntal note-spinning was evident, from time to time throwing a weight or two tinklingly to the deck at the musician's feet.

Elder Grandfather Lokness stood in the darkness of the side deck, feeling the muggy warmth of the night drift in around him, listening abstractedly to the sounds of the players and the distant cries of the sea lizards skimming over the water. He ignored these sounds; he was absorbed in thoughts known only to himself.

A footstep sounded beside him, but he paid no attention. There were several people strolling on the deck, some of the men arm-in-arm with their wives, others merely lonely passengers such as himself.

"An unpleasant night, eh, Elder Grandfather?" said a faintly rasping voice.

Lokness jerked his head around and stared at the drab little man at his side, struggling to place him. At last, he remembered. A contemptuous sneer crossed his face.

"Well, if it isn't the Elder Leader's lackey. What are *you* doing on this trip, Gwyl peDrang? I didn't notice you this afternoon."

Gwyl smiled and said nothing. He had ridden by fast deest downriver to the next port below Gelusar in order to avoid boarding the *Krand II* in the great city. He would leave at the next port if possible—the one after, if necessary. It all depended—

"I got on quietly," said Gwyl after a moment. "I wasn't anxious to have the Elder Leader know where I was going."

"Oh? And where *are* you going?" A vaguely puzzled note crept into Lokness' voice; he had little inclination to carry on a conversation with Gwyl peDrang, but it was easier to continue talking to the little man than to make an escape.

"I'm going with you," Gwyl said candidly. "There are spies in your office, you know. You're heading for Tammulcor to talk to the Director. You might want someone to back up your story."

Lokness was a little startled. "Spies . . . yes, of course I knew. But . . . hold on a moment! What do you mean, 'back up my story'?"

Gwyl said, "I'll be frank with you. I would like to enter the priesthood, but the Elder Leader says I'm only fit to be an acolyte. That's a personal reason. And I think the Elder Leader is taking too much on himself. Within a year, the Council will have no power at all. That's what might be termed a patriotic reason. Do you follow?"

Lokness' eyes narrowed. "I follow. You're saying that you'll tell the Director all you know about Nibro peSyg's machinations. Right?"

Gwyl nodded. "That's right. With the implied provision, naturally, that you'll do your best to get me into the priesthood."

Lokness was silent, staring out at the rain-spattered water. He considered the proposition.

He didn't trust the acolyte—but his story sounded good. Pure altruism from Gwyl peDrang, the Elder thought, would have been ridiculous —but personal gain was entirely within the man's character.

And a witness would be of value—

He tossed the matter back and forth in his mind for a few more moments, eyes fixed on a distant point cloaked by darkness. He had nearly made up his mind to accept the acolyte's offer when the moment came.

The deck on that side of the riverboat was entirely innocent of witnesses; there was no one in sight. Lokness was leaning over the rail, peering at the swiftly-flowing water as if it held the answer to everything.

A hard, heavy club smashed into the back of the Elder's head. He grunted, started to topple.

A quick heave, and the body tumbled over into the river, to be caught by the churning paddlewheel. There was a faint scream, barely audible beneath the thunder of the mechanism.

For a moment, the white foam was tinged with color. Then that, too, was gone.

When Drelk peShawm Brajjyd of Gelusar returned to the offices of the Keeper of the Bank of Sugon to hear what, if any, explanation Korvin peKorvin planned to proffer, there were several other men in the office besides the Keeper.

The tall young priest paused uncertainly at the door. "I didn't know this was to be a public meeting, Keeper Korvin," he said stiffly, tapping his fingers on his thigh in an irritated gesture. "Just who are all these people?"

The Keeper rose slowly from behind his desk. "Just some of the townspeople, Grandfather," he said pleasantly. "They have heard some of the . . . ah . . . charges against me, and they asked to be allowed to attend the meeting. Surely you don't object?"

Drelk peShawm glanced around. "I see no objection," he said after a moment. "If you want to make your activities public—" He shrugged. "Who are they?"

"Permit me to introduce them," Korvin peKorvin said. His voice remained polite. "This is Grang peDorg Dmorno, Chairman of the Board of our local school—Sugon Divine Law and Science. This gentleman is Gwylim peGanz Vyless, who heads our local Merchant's Council here in the city of Lidacor. Gils peKlin Sesom, over here, is a representative of the Seamen's Guild who bases his operations in Sugon. My friend to the left is Rahn peDom Dmorno, Uncle of Public Peace. And this is Grandfather Fulda peDrogh Brajjyd, Priest-Mayor of Lidacor.

"Gentlemen, Grandfather Drelk peShawm Brajjyd, who represents the Council at Gelusar."

The young priest glanced quickly down the row of seated Sugonese. Some were smiling, some were not, but none of their expressions were easy to read. The array of names, rattled off one right after another had confused him—which was exactly what Korvin peKorvin wanted.

Korvin kept smiling, but he watched the younger man closely.

"I hadn't expected quite so much of a crowd," Drelk peShawm began hesitantly, evidently to cover his own momentary loss of mental balance, "however, I think—"

"Would you mind explaining to all of us the exact nature of this patently fantastic charge against our Keeper?" interrupted the Priest-Mayor in a sharp, brittle voice.

"I'm just getting to that!" Drelk peShawm snapped harshly. Then he realized that it was a priest who had spoken, and frowned unhappily.

"As I explained to Keeper Korvin peKorvin yesterday," he continued in a more subdued voice, "there has been a certain regrettable lack of weight in the shipment of money from Sugon to Gelusar. As you know, we are now engaged in rebuilding the Great Temple of Holy Gelusar, and at this time it is extremely important that the Council Treasury be able to handle the vast expenses thus occurred. For this reason, we decided that it had become necessary to investigate the books of the Bank of Sugon."

The man from the Seaman's Guild said: "Sugon is not a rich province —never has been. If there isn't much money, it's because we haven't got much, not because of any alleged dishonesty of our Bank Keeper."

"I have reason to think he's lying," snapped Drelk peShawm.

"You don't trust our Keeper's word?" the Merchant's Council representative interjected. "Ridiculous! The Bank Keepers have always been among our most trusted citizens. We have known him all our lives; if we can't trust him, we can trust no one."

Furrows appeared on the priest's brow as he struggled to recall the name of the man who had spoken. Finally, he resorted to "Sir" and said: "A fine and noble attitude, sir, but not a sound one. Things have changed in the past generation. There was a time when one automatically assumed that money stored in a bank was safe—until the devil Earthmen proved otherwise when they cleared out the Bank of Dimay years ago. No, I'm afraid we can't take your Keeper's word at face value."

"Outrageous!" Gwylim peGanz said. "Why, we always trust our Keeper! He's as honest as . . . as the Great Light Himself!"

An irritated smile burst out on the priest's face. "You think so. I have evidence here . . . here in these record books . . . that your beloved Keeper of the Bank has been swindling money for years! That he's been diverting sacred monies from Gelusar for his own gain! That—"

"These things are flatly impos-

sible," said the Priest-Mayor. "Korvin peKorvin is one of our most admired citizens. This can't be."

"*Look in the books!*" Drelk peShawm half-screamed. "I don't have to waste words here. The man is plainly guilty; you can see that the moment you examine his records. They make no sense except on superficial first glance. Add his columns—"

The Priest-Mayor shoved away the ledger Drelk peShawm had thrust in his face.

"I'm no accountant; looking at columns of figures would be a waste of time. I'm perfectly willing to take the word of a man known to be a reliable authority. I have sufficient faith in Korvin peKorvin. I refuse to insult him by considering even the possibility of his dishonesty."

"Aye!" bellowed the seaman, and the others in the room nodded approval. Korvin peKorvin merely smiled beamingly at the Gelusar priest.

Drelk peShawm looked around a trifle wildly. Then, calming himself visibly, he said, "All right. We'll ignore the question of whether you interlopers care to look at the evidence or not. *I've* seen the evidence. Korvin peKorvin, have you anything to say in your own defense?"

"So I've been tried and found guilty so soon?" the Keeper asked. "You've yet to demonstrate that my books are not in order."

The priest scowled and ignored that. "I've computed the amount deemed owing the Council of Elders by you, and, including charges for delinquency and other minor fines, it comes to the sum of . . . ah . . . eleven thousand, four hundred eighty-two weights and six, exactly. I'll expect this sum at once."

The Priest-Mayor rose solemnly from his seat. "You would take more than *eleven thousand weights* with you to Gelusar on this trumped-up charge? I see. That's the whole purpose of this nonsense! You've placed these wild charges as a pretext for extorting money from Sugon! Well, you won't get it. It's out of the question!"

"You keep out of this!" Drelk peShawm shouted.

But the Priest-Mayor would not keep out of it. He turned on the young priest and said, "May I remind you that I am the Priest-Mayor of Lidacor, that I am considerably your elder in the priesthood, and that I am your superior in your own Clan! I will have to ask you to restrain your tone, or we'll declare this hearing at an end at once."

"But—"

"Furthermore," the Priest-Mayor went on, "rebuilding the Temple at Gelusar is a worthy notion indeed—but the temple here at Lidacor is in need of repair as well. We feel it unjust to send money to Gelusar when it is so badly needed here."

"And," said the head of the Merchant Council, "this drain of coins would parch our economy. Money is flowing freely in Sugon for the first time in many decades—and you

would skim eleven and a half thousand weights from us? Never!"

"How could we support our shipping?" demanded the Seamen's Guild representative.

"And our schools?" said the man from the college.

"Enough!" Drelk peShawm roared. "I'll hear no more of this chatter!"

He fumbled in his cloak and drew out an embossed sheet of paper. "The sum of eleven thousand, four hundred eighty-two weights and six is owing to the Council. I have with me an authorization signed by the Elder Leader Ghevin himself, instructing me to collect the delinquent sum." He tossed the document insultingly on the desk before the Priest-Mayor. "There! Would you defy the Elder Leader?"

The Priest-Mayor picked the paper up with exaggerated care. He examined it, squinting myopically, rubbing his old fingers along the surface of the paper to feel its texture. "The Elder Leader, eh? Nibro peSyg Ghevin is the name?"

"You see his signature."

"Indeed I do," the Priest-Mayor said. "But how do I know it is genuine? The Elder Ghevin is newly-elected—he has held his post no more than a year, if that much. I'm not yet familiar with his handwriting."

"I have heard," said Korvin peKorvin, "that this Elder Ghevin is a former local priest of Sugon, who was known here as a member of the Sesom clan. Odd that a Sesom should head the Clan Ghevin, isn't it?"

The Priest-Mayor folded the document slowly. "This is undoubtedly a forgery. We certainly can't turn any money over to you on the basis of *this*."

He flipped it casually forward. It fluttered to the ground at Drelk peShawm's feet.

The priest stared at it incredulously for a moment. "This is a conspiracy," he said huskily. "You've arranged this between yourselves, all of you. You *planned* it!"

He stared at Korvin peKorvin. "And you're the one who started it! I should never have allowed you that day of grace! I—"

He plunged forward suddenly, hands groping for Korvin's throat, and started to vault over the desk.

Abruptly Rahn peDom Dmorno, Uncle of Public Peace, who had been silent throughout the entire course of the conversation, rose smoothly from his seat and snared the young priest with one massive hand. Rahn peDom was a man of middle age, but of giant stature; he held the squirming Drelk peShawm for a moment, then released him, giving him a contemptuous shove that sent him staggering across the room.

"Violence!" the priest said harshly. "Laying violent hands on a priest!"

"You've forgotten who began it," the Uncle of Public Peace pointed out. "I think it's time you left Lidacor, young man."

"Impossible! Nibro peSyg . . . the Council of Elders has ordered—"

"The Council of Elders is in extremely bad odor in Sugon this morning," the Uncle said. "Get aboard your deest and get going." There was a menacing glitter in his eyes.

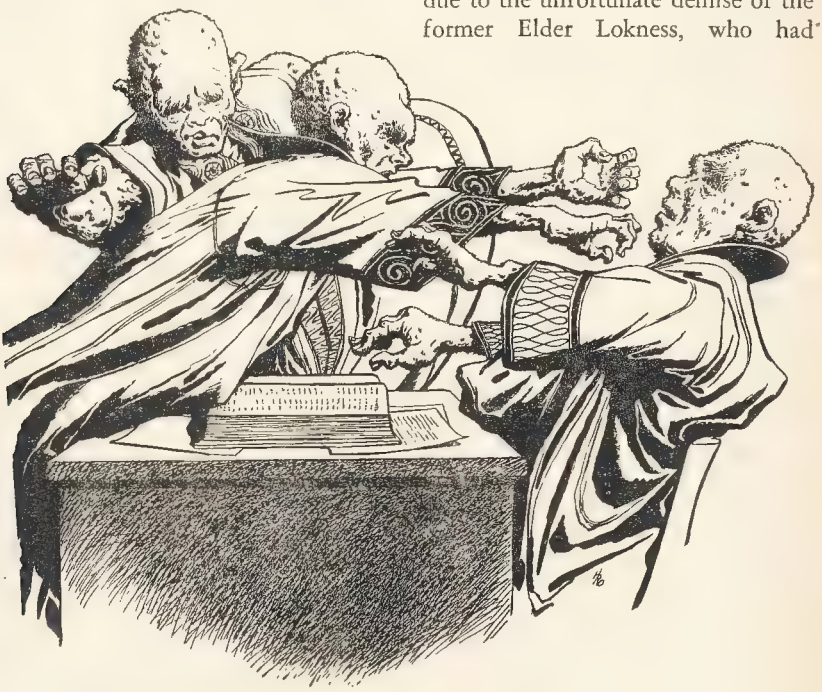
Drelk peShawm backed toward the door. "You'll pay for what you've done today. Not merely eleven thousand weights. Nibro peSyg will handle this, you can be sure. The Council will—"

"Out of Lidacor in an hour," the Uncle boomed. "And if you're found in the province by nightfall—"

But Drelk peShawm did not remain to hear the threat. He was out of the Bank and running at top speed toward the stable where he had boarded his deest.

A procession of armed, colorfully-clad men moved down the broad, turf-covered highway that ran between Gelusar and the southern port of Tammulcor. In the lead was the Elder Grandfather Nibro peSyg Ghevin, Leader of the Council of Elders.

Nearby was the Elder Grandfather Gwyl peDrang Lokness, formerly of the Clan Sesom. He rode at the right of his former master Nibro peSyg. Gwyl peDrang was newly-elevated to the priesthood and the Council, due to the unfortunate demise of the former Elder Lokness, who had



accidentally fallen from a river packet.

The late Elder's body had been recovered several days after the accident, and full honors had been given the late Elder before a new man was chosen for his place.

On the Elder Ghevin's left rode Grandfather Drelk peShawm Brajjyd, and behind them followed a group of armed priests and acolytes. It made for an imposing sight.

"We haven't far to go," said the new Elder Lokness. "That's Tammulcor ahead."

Nibro peSyg nodded, saying nothing.

"Do you think the Director's going to give us what we ask?" Drelk peShawm asked.

"I hardly see how he can refuse," Nibro peSyg replied without looking around. "He's taken an oath by the Great Light Himself. Besides, such a thing as this Sugon revolt changes the picture entirely. The petty squabbles between the Directorate and the Council are nothing in comparison to something that threatens the peace and stability of all Nidor."

They rounded a bend in the river, and before them lay the great Bay of Tammulcor, filled with sailing vessels of all descriptions. Nibro peSyg's sharp eye picked out the curious bulk of one of the new seagoing steamers as well.

The procession made its way around the shore road to the city and headed directly for the bulky building which housed the Director, Ganz peDel Vyless. Silently, Nibro peSyg hoped the old man wouldn't give them much trouble.

The Director had been informed that the Elder Leader was coming. "It was remarkable," Nibro peSyg said to Gwyl peDrang, "how the long-distance wires to Tammulcor, which had been out of order for the late Lokness, had been miraculously repaired when I found it necessary to use them to call Ganz."

"The Great Light provides for those who keep His ways," Gwyl peDrang said ostentatiously.

So it was as they approached the Directorate Building, they found the way lined with an honor guard in the striking black uniform of the Director's Hundred Men. Nibro studied them curiously as his retinue passed. They held themselves proudly erect, but—

They were *old*!

They were certainly not men in the fighting prime of their lives!

The Elder Leader shrugged. Doubtlessly they had chosen the oldest men to constitute the honor guard. Evidently they were still clinging to the outmoded idea that age in itself was enough to make a man more honored.

Well, that was none of his business; he wasn't interested in the honor guard. The Director could keep his old men here in Tammulcor; Nibro wanted the young fighters.

The Elder Leader and his men dismounted in front of the building. A ridiculously potbellied man in the

black uniform of the Hundred stood there, bowing politely.

"We are honored by your visit, Elder Leader. The Director has asked me to show you to your rooms so that you can cleanse yourselves. The dust of the road—"

"I'll bathe later," Nibro peSyg snapped. "The business I have with the Director is too important to wait. Tell him I'll see him at once."

The officer bowed again. "He suspected as much. Come with me, please."

He turned, walking with a clumsy pigeon-toed tread, and Nibro peSyg followed him into the Directorate Building.

They went down a long hall to a large bronzewood door at the rear. The Directorate's offices, thought Nibro peSyg, were not unduly magnificent.

The officer rapped on the door. "The Elder Leader is here," he said.

"Let him come in," said a curious-sounding voice from within.

Nibro opened the door and stepped inside.

The room was large and ornate. On the far side, a broad desk stood beneath a wide window. And behind it sat an old man.

Nibro was actually shocked. Ganz peDel should be in his late forties or early fifties, but he looked older —much older.

"Sit down, Elder Leader," said Ganz peDel in a husky, tired voice. "Sit down. Tell me what it is you have ridden so far to say."

Nibro peSyg took the indicated seat, feeling rather awkward in the presence of the old man. He had to remind himself that Ganz was only fifteen—perhaps twenty—years older than himself.

"Director," he began, "I'll come to the point at once. As you may have heard, the northern province of Sugon has rebelled—or, at least, several of its leaders have committed an act of treason against the Council."

The old man smiled. It was an odd smile—kindly, understanding, and yet—somehow—it was bitter.

"I have heard. It's not the first time there have been rebellions in Nidor—nor will it be the last."

"You have heard? And yet you have done nothing?" Nibro was startled; the Director's calm, unquestioning acceptance of the fact of the Sugonese rebellion took him totally by surprise.

"I could have done something," Ganz said. "I still could, I suppose. But I won't, because it will make no difference in the long run."

Nibro scowled. "No difference? I'm afraid I'm not following your train of thought."

"There was a time, Elder Ghevin," the Director said, "when you would have wasted the first ten minutes of our conference making the proper forms of obeisance to me, because I happen to be older than you. Or, contrariwise, I would have been making the ceremonial speeches to you because, according to custom, the Elder Leader was always the oldest

priest on Nidor. But those times have gone forever."

Nibro peSyg flexed his shoulders beneath the blue cloak. "Not forever, Director," he said. "I intend to see that Nidor returns to the Law of the Scriptures and the Way of our Ancestors. That's why I've come to you. The Council needs the Hundred Men; Sugon must be shown who rules in Nidor." Nibro peSyg clenched his fists. "Kris peKym Yorgen, the Great Martyr, showed the devil Earthmen that they could not interfere with the Way. I intend to do the same with the rebellious Sugonese! We shall have order and the ancient Way again!"

The chuckle that came from Ganz peDel Vyless was soft but sardonic. "I have never heard so many mistakes in one set of sentences. Kris peKym may have been a martyr, but he was also a fool. He fancied himself the only dangerous man on Nidor. I fear you are making the same mistake."

Nibro's face darkened, and the Director patted the air with a hand. "Oh, no, Elder Leader. Not I. I am not in the least dangerous. I have seen the futility of action. I merely wait. Please—let me continue.

"Neither did Kris peKym, as you put it, 'show the devil Earthmen that they could not interfere with the Way.' He was far too late. They had already done their work. They had not only interfered with the Way—they had completely, utterly, and absolutely smashed Nidorian culture forever!"

Nibro peSyg's sudden wave of anger at such a stupidly ridiculous—almost blasphemous—statement was quickly suppressed by the realization of what had happened to the Director. He had tried to put Nidor to rights again and had failed. He had failed because he was weak and incompetent, and that failure had made him old before his time. He was to be pitied, not vilified.

But Ganz peDel was smiling again, his patient, tolerant, bitter smile. "I know what you think," he said. "I know what I thought at your age. Shall I tell you a story?"

The sudden change of subject caught Nibro by surprise. He blinked. "A story? Uh . . . well . . . go ahead."

Ganz folded his hands and settled back in his chair. He was silent for a moment, deep in thought. Then, abruptly, he began: "Perhaps you know of my secretary? Yes—Norvis peKrin Dmorno—dead these five years and more.

"For twenty-five years, he had dropped hints now and then about an unusual experience—as though he knew something that no other Nidorian had ever learned. I think he told his children—perhaps his wife, though I doubt it. But he told no one else.

"But he was an old man when he died, and delirious towards the end. He didn't know I was around most of the time. He babbled. Sometimes he made no sense at all. But part of what he said very definitely did make sense.

"He saw the Earthmen after they had supposedly been driven from Nidor. They took him up to the sky —past the sky and beyond. He saw the Great Light Himself."

He paused, as though expecting some sort of reaction from Nibro. But there was none forthcoming; the Elder Leader had already made up his own mind.

Ganz peDel shrugged almost imperceptibly and went on. "The Earthmen told Norvis that they had deliberately smashed Nidorian civilization. It had been static and unchanging for too long, so they forced us to change. As long as Nidor had a relatively unchanging and homogeneous population, we could remain as we were—stable, but static. But the Earthmen concentrated our best minds in the Bel-rogas School of Divine Law for a hundred years—more than six cycles. The concentration upset the balance. Our society toppled and broke. It can never be rebuilt."

Nibro smiled at Ganz peDel's words—a half sneering smile. "Am I to understand," he said slowly, "that you have based your theory of inaction on the mad ravings of a dying underling—a man who claimed to have had some mystical experience with the Great Light Himself? Ridiculous!"

Ganz peDel's steady smile did not change. "Perhaps. But bear in mind that I tried for twenty-five years to repair the damage—and I only succeeded in doing more. Now I have ceased to act, and the damage increases at the same rate. The deterioration of Nidor has proceeded steadily, unchanged, whether I act or not."

Nibro said nothing, but his expression was easy to read.

"I may have been incompetent," Ganz peDel confessed. "I am old enough now so that I do not flinch at realizing that I have limitations.

"But I, too, thought of rebuilding the Temple. In my youth, I hated the priesthood, but later I realized that the priesthood could weld the people together again. And still later, I realized that nothing would do any good."

He paused, and his smile vanished as he looked directly into the Elder Leader's eyes. "No man likes to be told he is a puppet, helpless in the grip of forces he cannot control. But let me warn you, Elder Grandfather: you cannot change the flow of the tide! I won't say you can do nothing; I'll simply say it doesn't matter *what* you do.

"If the priesthood becomes weaker, Nidor will fall apart into warring factions; if you try to strengthen the priesthood, you will force Nidor apart, as you are already beginning to do; if the priesthood becomes neither weaker nor stronger, then someone else will take control.

"I did not rebuild the Temple. So *you* tried. And if you had not, some other priest would have tried. Or perhaps someone else would have, a Bank Keeper or a wealthy merchant. It doesn't matter."

Nibro shrugged. "That, I think, is a matter of opinion."

"Exactly!" said Ganz. And for the first time, there was a touch of excitement in his voice. "Exactly! You have put your finger on it! It *is* a matter of opinion!"

Nibro looked startled. Now he was quite sure the old man was mad. He was oddly reminded of the New Lawyer.

You think all who tell the truth are mad!

He pushed the memory from his mind as Ganz went on.

"For four thousand years—two hundred and fifty cycles—everyone on Nidor knew what his opinion should be. If he was a farmer, he farmed in the Way of our Ancestors. If he was a merchant, he bought and sold according to the same rules. There was no question as to whether or not it was right in his opinion. Everyone had the same opinion.

"And now? Everyone has a right to his own opinion, just as he did then. But now the opinions differ—and who is to say who is right? Each is of the opinion that *he* is right.

"And what can you or I or anyone do about that? Can you change *everyone's* opinion? No! And that leaves you as helpless as everyone else!"

Nibro's smile had become somewhat similar to Ganz peDel's. It was tolerant, but instead of a touch of bitterness, it was stained with a faint sneer. "It seems to me that you are trying to change my opinion. You want me to do what you have done—sit around and watch Nidor go to pieces. You want me to loaf and twiddle my fingers and look down my nose as you do. You want *me* to give up, too."

He stood up suddenly, and slammed his fist on the desk. *"But I won't!* I see through your stall! You have no intention of relinquishing control of your armed men, and you have no intention of leading them yourself!

"But I warn you! I am Elder Leader! I want those men!"

Ganz didn't even look excited. "I hate to see men lose their lives in useless battles. And these are older men—men with families and children."

Nibro was taken aback. "Old men! But why? The men who followed the Great Martyr weren't old men!" he shouted. "Why have you no young fighters?"

"We do have—a few. Those who couldn't get employment elsewhere." A glint came in the old man's eyes. "Why should young men join? What have we to fight? Kris peKym had something to fight! He was doing what he thought was right to save Nidor; he had a menace to combat! But for nearly two cycles there has been nothing."

"There's something now," Nibro said harshly. "There's a rebellion to put down. And this isn't the kind of rebellion Kris peKym led. This is a rebellion against the Council,

against the Directorate, against the rightful rulers of Nidor!"

Ganz peDel attempted to say something, but Nibro continued without interruption. "I tell you, Ganz peDel, this thing has got to be stopped right here! A group of northern mountaineers led by an embezzling criminal cannot be allowed to override proper authority—or we will have no authority at all! If this is allowed to continue, Nidor will be in the throes of chaotic anarchy within no more than fifty days!

"And in the face of that, you refuse to give me the men to fight with because you think I should do nothing!"

Nibro had to stop temporarily for breath, and Ganz said: "You misunderstand me. I'm not refusing to give you the men. I'll sign the papers, give them their orders. They'll obey you as well as they would me."

Nibro blinked. He felt as though he'd been trying to push down a stone wall only to have it turn to fog. The sudden lack of resistance almost overbalanced him.

"You didn't listen," Ganz went on. "I didn't say that you should do nothing. I said it doesn't matter *what* you do."

The procession of priests and acolytes trotted northward, augmented this time by a complement of a hundred and fifty black-clad armed men.

Northward they went, their deests eating up distance with their easy, loping gait. The procession followed the broad highway that ran along the western banks of the mighty river Tammul, from Tammulcor to Gelusar. At Holy Gelusar, they crossed the Bridge of Klid to the eastern shore and headed northward, toward the headwaters of the Tammul, deep in the Ancestral Mountains, where the Sumay Pass gave access to the Province of Sugon.

Elder Leader Nibro peSyg Ghevin rode at the head of the procession, staring squarely ahead. He felt quite confident. There was no need for a battle, really—and so it made no difference that the men of his army were somewhat past their prime.

They were able men, and the threat alone should be more than sufficient to silence the handful of men who had defied the Council.

The next project, Nibro thought, would be to get rid of the Directorate, and then—

Nibro peSyg chuckled softly to himself.

It was a lovely vision: the Temple proud and new in the heart of Gelusar, the Five Provinces sending their tithes, the Council supreme and Nibro peSyg controlling the Council—in the name of the Great Light, of course.

During the warmth of the day, the army rode steadily northward toward Sugon. At night, they sheltered themselves from the evening rains and made camp on the bank of the Tammul. This far north the Tammul was no longer a broad, easily navi-

gable river, but a narrow winding trickle coming down from the mountains rearing ahead.

It was a few hours after dawn when the band approached the gap in the foothills that led to Sumay Pass.

Grandfather Drelk peShawm said, "Do you think there will be much fighting, Elder Leader?"

Nibro shook his head. "None, I should say. Or, at least, very little. No one but a fool will fight in the face of an overwhelming group of armed and determined men."

It was a sentence destined to haunt him, to drift back mockingly a few hours later.

The longest electric communications line on Nidor was the line that ran from Holy Gelusar to Tammul-

cor; it had been constructed after the establishment of the Directorate, in order to keep the secular government in touch with the Council of Elders. Most "long distance" lines simply ran short distances to the villages surrounding large cities.

Across that line had come a communication to the Council, informing them that Elder Leader Nibro peSyg Ghevin was starting north at the head of an army.

A certain acolyte, on hearing the news, went quietly into the city. He spoke to another man.

Twenty minutes later, that man was on a fast deest, spurring his mount up the banks of the Tammul. He rode hard and fast, stopping only once to change animals at a small village near the foothills of the Ancestral Mountains. Then he rode through the Sumay Pass into the Province of Sugon.

When he reached his destination—a small Peacemen's Office at a mountainous Sugonese village—he dismounted and ran in.

Within that building was the second longest line on Nidor—one which had existed only for a matter of a few days.

"Get the Keeper on the line!" he yelled. "The Elder Leader is on his way north with two hundred men." The number had become exaggerated in the telling. "Get Korvin peKorvin!"

Ten minutes later, Korvin peKorvin Danoy, Keeper of the Bank of Sugon, had heard the message. He replaced the microphone of his instrument and smiled unworriedly. Then he lifted it again.

"Get me the Priest-Mayor," he snapped.

There was a pause while the channels were linked. "Hoy, Grandfather. They're on their way. Yes. Yes, that's right. Fine. You've heard from Vashcor? Good. I thought so; those Pelvash seacoasters are a pretty independent bunch. Good! That should time it about right.

"Now get this: we'll leave within

an hour. Everything else here is ready to go. Good. Light bless you, Grandfather."

He lowered the microphone again. His smile had become even broader.

Elder Leader Nibro peSyg pulled up short on the reins of his deest and raised one hand.

"Powers of Dark! What's that?"

He pointed one long golden finger down the road that slanted upward toward the pass.

Drelk peShawm stared. The young priest said, "Someone has put a barrier of stones across the pass."

"That's fairly obvious," Nibro said acidly. "Was this the road you traveled when you journeyed to Sugon the time before?"

"Yes . . . yes, of course. That barricade wasn't up last time I went by here."

Ahead, a wall of piled-up stones completely blocked the pass except for one small opening, barely wide enough to admit a single deest.

"There are men standing behind it," said Drelk peShawm. "I can see their heads and shoulders."

"Let's go up and take a look," said Nibro.

He turned around and called to the black-uniformed men behind. "This looks like trouble. Get ready. If they think they can stop us with a wall, they're out of their minds. Our animals can take that barrier easily."

The Officer-in-Charge nodded. There was a loud chorus of clicking rifle-bolts as the weapons were loaded. Then they moved forward, toward the barrier.

As they approached, Nibro noticed rifles lowered over the ramparts of the stone barricade. His face, already bleak with anger, became icy.

"Stop!" bellowed a voice. "Proceed no further!"

"What is the meaning of this?" Nibro shouted. "Who in Light's name are you?"

"Rahn peDom Dmorno, Uncle of Public Peace for the Province of Sugon!" came the stentorian answer. "And who are you?"

Nibro impatiently scowled at the foolish question, and ignored it. "Uncle of Public Peace for an entire province?" he repeated. "What nonsense is this? There is no such office! You are an impostor!"

"No more so than you!" came the bellowed reply.

Nibro peSyg felt his face reddening. "I am Elder Grandfather Nibro peSyg Ghevin, Leader of the Council of Elders of Nidor!" he roared at the invisible speaker. "I demand that you let us pass!"

Raucous laughter drifted out of the barricade. "You're no Ghevin! I know for a fact that you're a Sesom from Sugon! You have no right to bring armed men into a peaceful province!"

"You have no authority here!" returned Nibro peSyg. "This is Dimay Province."

"Not beyond these mountains, it isn't!"

"We're going to pass!"

"Try it," said the Uncle of Public Peace, "and we'll fire."

Nibro peSyg's jaw sagged. "Would you fire on *priests?*" he asked incredulously. Such a thought had never occurred to him before. The body of a priest was sacrosanct.

"We would fire on impostors!" Rahn peDom shouted in reply. "You, and that other Sesom who calls himself a Lokness! And if others are hurt, is that our fault?"

Nibro scowled. "What do you want? Do you think we will turn from our rightful duty simply because a bunch of rabble stand in our way?"

The Uncle said, "That will be seen. Also, who of us is the rabble. Our Keeper would have a word with you. He will meet you outside the wall here."

Unpleasant visions of martyrdom flickered through Nibro peSyg's mind. He had no desire to share the fate of the legendary Kris peKym Yorgen.

He turned to Gwyl peDrang. "I'm going to see him." He smiled nervously. "If I get shot, you shoot him, and be sure you don't miss. It's fair enough. If he dies, the whole uprising will collapse."

Gwyl nodded. "I understand, Elder Leader. I will be ready."

Nibro's eyes narrowed thoughtfully. "On second thought, I believe you ought to come out there with me. The two of us will be a better match for this criminal."

Gwyl peDrang shrugged. "As you say, Elder Leader."

"Let's go then," said Nibro. It was not that he distrusted Gwyl peDrang; it was simply that he feared the acolyte might take it into his head to shoot Korvin peKorvin without provocation. If that happened, the Sugonese would surely strike down Nibro where he stood. And that might suit Gwyl peDrang all too well, since it would leave the way open for him to become Elder Leader.

Nibro cupped his hand to his mouth and faced the barricade. "We will speak with the rebel Keeper," he shouted.

"Advance!"

Nibro and Gwyl trotted their deests toward the wall, under the watchful muzzles of a dozen rifles.

"Dismount," called the Uncle of Public Peace.

"Easy on the trigger finger," Nibro cautioned softly, as he leaped from his mount. Gwyl peDrang clambered from his deest and stood at his side. They waited, expectantly, facing twelve rifle-snouts.

After what seemed like minutes, Keeper Korvin peKorvin and the Priest-Mayor stepped through the narrow opening, Korvin ahead of the Grandfather.

Before the Keeper had a chance to say anything, Nibro snarled: "What in Darkness do you mean by staging this armed uprising?"

The Keeper's face assumed an expression of wounded innocence. "Armed uprising?" he repeated quizzically. "Oh, no, Elder Leader.

That term is wholly unjust. We're merely doing our duty—which is, as we see it, to preserve the peace of Sugon."

"As you wish to call it," Nibro barked. "It still remains an armed uprising. You're under arrest!"

"Oh? And the charges?"

"High treason, blasphemy, sacrilege, threatening the life of a priest, embezzlement, and conspiracy to do harm to the peace of Nidor. There are more charges, but these ought to do." Nibro's eyes were cold.

The Keeper smiled blandly. "Very well. I plead not guilty to all charges."

Immediately, the Priest-Mayor of Lidacor turned to the armed men behind the parapet and made a ritual gesture of designation.

"As Priest-Mayor, I am entitled to the position of judge in this case. So says the Law. Acting within my rights, I appoint you men as fit judges-in-aide. What do you say? Call out your verdict!"

"Not guilty!" came a somewhat ragged but hearty chorus. "Not guilty! Not guilty!"

"So be it," Priest-Mayor Fulda peDrogh said. "Acquitted. Case dismissed."

Nibro had barely had time to open his mouth during the entire trial. Angrily, he realized that they were making sport of him.

"This is a farce!" he howled. "This mockery of a trial is not legal in any sense!"

"It is in Sugon," said the Priest-Mayor calmly.

"But—"

"No buts!" snapped the older priest. "You have no legal right to invade Sugon with armed men. I'd advise you, you young upstart, to get back to Gelusar and spend your time ranting at your false, sycophantic Council instead of at honest, law-abiding men. We of Sugon have no need of you, Sesom that calls yourself a Ghevin. Go!"

Beneath his golden facial down, Nibro peSyg's face became suffused with the crimson of anger. In a strangling tone he said, "I'll take my men into Sugon and put a stop to this nonsense!"

"Will you?" asked Korvin pe-Korvin. For the first time, there was no smile on the Keeper's pleasant face, and his voice was cold and metallic. "Do you think that because you see only a dozen men, that there are only a dozen men to be had?" He chuckled unamiably. "Don't be a fool, Nibro peSyg *Sesom.* The crags of the pass are lined with my men. Trapped in that narrow gorge, your army wouldn't last five minutes —and you, Nibro peSyg, would be the first to die. You have no legal authority in the Province of Sugon. Now go."

He turned his back and walked through the narrow gate in the barricade without another word.

"You have heard our Keeper," said the Priest-Mayor. "And you have heard me. Your way lies clear, Nibro peSyg." And then he, too, was gone.

Nibro peSyg glared malevolently

at the muzzles of the leveled rifles before him, and mounted his deest, his teeth clenched in silent rage.

They rode darkly through the countryside, back from the barricade. Nibro peSyg was in a black mood, and no one dared approach him.

Finally, when they were well away from the barricade, Drelk peShawm matched the pace of his deest with Nibro's, drew alongside, and asked, "What can we do now, Elder Leader?"

"There's more than one way through to Sugon," snarled Nibro. "We'll go around the Mountains of the Morning, and move up through Pelvash Province. Sugon is wide open from that angle. And we'll get money for a bigger army. I'll see Korvin peKorvin's head mounted on the palisade round the new Temple before the season's end!"

"Very good, sir."

"Have Drosh peMarn ride with me," Nibro said. "I want to make sure he understands where we're heading and why, the old fool."

Drelk peShawm dropped back, and a few moments later Drosh peMarn Yorgen, the Officer-in-Charge, drew near the Elder Leader.

"Light's blessings, Nibro peSyg."

"Oh . . . it's you. Listen, Drosh peMarn, here's the plan by which I mean to thrash Sugon. We—"

"Sir," the elderly soldier interrupted. "Uh . . . Elder Leader . . . uh, well, the men have been talking to me."

"So?"

"Uh . . . well, if you intend to go back through that pass, Nibro peSyg, you'll have to go by yourself." Drosh peMarn took a deep breath and added decisively, "They feel it would be certain death for us to go, but maybe they wouldn't fire on a priest."

Livid with rage, Nibro lashed out with his fist, knocking the older man from his saddle. Drosh peMarn went spinning to the ground, landing fairly skillfully despite his years, and sat in an insulted-looking heap at the feet of his deest.

"Ignorant, stupid old fool!" Nibro raged. "Of course I won't go through that pass! Mount up! You're not hurt!"

Behind him, he heard a steady, insistent murmuring; the black-clad soldiers obviously did not care to have their Officer-in-Charge thrashed before their eyes. Nibro wheeled his deest around and signaled for a halt.

"We're heading for Pelvash!"

Later that afternoon, someone spotted a dust cloud on the road ahead.

A rider galloped up. He was clad in the robes of an acolyte, but they were damp with perspiration and gray with dust. He had ridden hard and long.

"Well? You have a message for me?" Nibro asked impatiently. He was still smarting from his defeat at the Pass, and expressed his irritation at every chance he had.

The acolyte's voice came in a hoarse gasp. "I was afraid you had

gone on to Sugon, Elder Leader. I did not know—"

"We return from Sugon," Nibro said. "Speak up!"

"It is well that you have finished your work in Sugon, then," the messenger said.

"What do you mean?"

"You must ride for Pelvash immediately!"

"We *are* going to Pelvash!"

The acolyte smiled in relief. "Then you have heard, Elder Ghevin?"

"Heard? Heard what?"

Fright crossed the messenger's face. His eyes widened. "The Keeper of the Bank of Pelvash has said that he does not intend to carry more than his share of the cost of building the Temple," the acolyte stammered. "If Sugon won't pay—he says—he won't pay, either."

Nibro blinked in astonishment. His poise deserted him for a moment, and in a pained whisper he said, "Pelvash, too? And after that the other provinces must go!"

"The Keeper of the Bank of Pelvash has given his orders," said the acolyte. "They've cut off every road between the Mountains of the Morning and the sea!"

Nibro was stunned.

Drosh peMarn turned to look at the Elder Leader as he heard the words. The swelling on one cheek twisted his angry smile.

"You have botched everything, Elder Leader," the old soldier said bitterly. "We of the Hundred have had enough of this crusade. We're going home to Tammulcor."

Nibro spun and summoned what little authority he had left. He snapped a quick, crisp order to Gwyl peDrang: "Shoot me that traitor!"

Gwyl went for his gun.

Drosh peMarn, though, was ready for the attack. Gwyl's pistol was scarcely out of his belt when the weapon of the Officer-in-Charge roared out a cloud of flame and smoke. The deests whinnied in terror; Nibro was hard put to keep his tired animal under control.

A spreading stain of blood appeared on Gwyl peDrang's chest. He held himself upright in his saddle for a moment, still groping for his own weapon, and then toppled heavily to the road. The ex-acolyte twitched a moment, and lay still. The Clan Lokness was again without an Elder.

"Well, Nibro peSyg?" asked Drosh peMarn. "Your decision?"

Nibro peSyg did not turn. He knew what was behind him: the leveled muskets of the black-clad men, anxiously defending their Officer-in-Charge against the bungling Council leader.

He did not need to turn. The pistol muzzle of Drosh peMarn was plainly visible—and the Officer-in-Charge seemed perfectly ready to fire again.

Nibro realized with a sudden cold chill that these men had lived through a period which was only history to him. These were men of the original Hundred, men who had helped to slaughter priests and

acolytes alike during the Burning of the Temple. They would not stay their hands when it came to killing him.

He glared at the acolyte who had brought the fatal message. There had been a time when Nibro peSyg would order a man shot for shouting such news aloud. Now, he knew, if he raised a hand against the acolyte his own men would cut him down.

It was a bitter moment for the enterprising Sugonese priest. He had clawed his way to the highest power in Nidor—and, now that he had attained it, he had found it was no power at all. He was a ruler of words; words had no effect without backing.

First Sugon, now Pelvash, slipping from his grasp as positively as if they had glided from the continent and drifted off into the shoreless sea. No doubt within hours word would come from the other provinces that they had done the same. He would be supreme only in Dimay, and even there his rule would be shaky.

Could I have avoided this? He wasn't sure. The words of the New Lawyer, half-forgotten, buried deep in his mind, now stood out in awful clarity. The disaster could not have been avoided. Whatever course of action he had undertaken, Sugon would have rebelled. He had never been free to act; he was the slave of implacable forces outside him.

His fingers tightened on the reins. There would be no new temples built in Gelusar. The old ways were forever dead. The chaos of the last five generations could not be undone.

Well, he thought, *I tried.* And, in trying, merely hastened the process along its irreversible course. Thanks to his attempt at wielding power, Nibro peSyg thought gloomily, a wedge had been driven between the Five Provinces.

"Very well," he said slowly. "We will not march to Pelvash. We will return to Gelusar." He threw back his shoulders, looking very proud and straight in the saddle of his deest. "To the Holy City of Gelusar —and the Great Temple that was."

He said it, but it didn't really matter what he did.

THE END

GUPPY

BY STANLEY MULLEN

There is such a thing as being too much of a help—and the most helpful thing a too-helpful entity can do is to stop helping!

Illustrated by Freas

He swam idly in his tank of nutrient solution, enjoying its liquidity, its temperature, its salinity, and little else.

Everybody on the asteroid called him Guppy. He was not a guppy, of course. Not even a fish, and did not look like one. A long time ago somebody had called him Guppy as a simpler way of referring to Government Project 37B,9992,0434, and the name stuck. Not too many people called him either one, since Guppy's very existence was classified information, top secret. Guppy was a national, or planetary, asset.

Guppy was a synthetic brain, composed of reclaimed organic tissue, radioactive carbon and copper, plastic, accidental brain-cell mutation, and pure nightmare. Somewhere in the process of keeping vaguely alive some human organs acquired through body salvage, a spark had been struck, and the experiment went wrong, or curiously right. Guppy was alive, after his own fashion, a personality and identity, a sentient being, but with brainpower far beyond that of even giant robot computers.

Apparently Guppy knew all the answers. And sometimes, if his metabolism functioned properly, and his mood happened to be good, he could be prevailed upon to share his knowledge. A world-government had promptly confiscated this prodigy from private ownership, hushed up a number of fanciful rumors concerning it, and sequestered the wonder beyond reach of all non-qualified

personnel. To Guppy, as a court of last resort, came all major policy-decisions concerning politics, economics, sociology, and so forth, including even the gravest matters of state.

Naturally, Guppy was bored. . . .

Spiritually, he may have been alone most of the time, but physically he was not. He had guards around the clock, simple men chosen for their incorruptibility rather than their sociability. Men like Steve Ransom. . . .

Ransom had the four-to-midnight shift of guard duty, not too crowded with questioners. Still he had watched many VIPs come and go, often finding amusement in their bafflement. Guppy's function might be answering questions, and nobody denied that he was good at it. But more often than not, he became temperamental, and his answers were more cryptic than oracular. And politicians, military brass, physicists, sociologists and financiers are rarely men noted for agility of thought.

Steve Ransom got very tired of Guppy's visitors and was glad they were scarcer on the four-to-midnight run. Very seldom did the complex of coded signals come through, requiring the switching-off of numerous alarms and the opening of several robot guarded doors. Very seldom, but not seldom enough.

Ransom went swiftly through the maze of passageways to the curious garden deep within the asteroid. Everything here had been planned according to Guppy's needs, includ-

ing housing for his serving staff, his guards, and the crew of mechanics who kept his private world operating. A whole asteroid had been snatched bodily from space, made over according to specifications, and set orbiting Earth as a second satellite. Its hollowed interior was jungly growth of giant plants and flowering bushes, its purpose more part of the hydroponic air-cycle than decorative.

As a prison, it was luxuriant. But Guppy resented his status as confinee more bitterly for the magnificence of his padded cell. He felt that any psychosis involved was that of his determined hosts and guardians—and that he was a victim of that peculiar distortion of political minds called security regulations. It seemed that he, who was sanest of the sane, should be confined as the victim of other people's delusions.

Abnormal psychology groups such delusions of fear, insecurity and persecution under the general heading of paranoia, and the holders of such delusions are confined, for public safety, under maximum security. Outside of politics, Guppy would have been as free as air, and his guardians quickly consigned to the nearest asylum. But in politics, Guppy knew, paradox is the norm, but he was very tired of his plush prison and lonely domain.

"Hey, Steve!" A hidden speaker clattered out the words mechanically, for the time of crude signals and mathematical codes was long past in communicating with Guppy.

Ransom heard the hail, and groaned inaudibly. Inaudibly, he hoped, for Guppy's "ears" were sharply tuned microphones which caught the least vibration in air around the tank.

Ransom had neither reason nor desire to offend the great brain, but some of Guppy's moods and conversations were quite upsetting, and Ransom already had enough on his mind. He wondered if ignoring the call, pretending he had not heard, would do any good, and knew painfully that it would not. He glanced at his wrist-chron, estimating, wondering how long Guppy's current demands would take. Anyhow, it was time for a quick check-up on the "monster," then perhaps he would be free to check out a film tape from the library to while away the hours of weary boredom.

"What is it, chum?" asked Ransom, glancing uneasily at the tank.

"What's for supper, chump?" blatted the speaker. "More of that reconstituted chemical goulash, I suppose. I keep thinking about a nice juicy steak with mushrooms and all the trimmings. Or maybe some southern fried chicken. Or waffles and maple syrup. Or fluffy-wuffy mashed potatoes with sour cream. All those things you dream about."

"What would you know about such things?" demanded Ransom. "You never had a steak and never will have."

"I can dream, can't I? Your dietary dreams are better than none." The speaker diaphragm rattled with emotion. "O.K., Steve, I'll admit

that all I know about such things are responses I've dredged from people's minds. But the stuff must be good to get such reactions. Wouldn't you get tired of a diet of delicious chemicals and crunchy-munchy minerals and soluble vitamins?"

"Sure I would. But you've just been torturing yourself by tuning in on so many telecast commercials. Stop drooling. You aren't equipped for it. You'll take what you get, and like it."

"I'll settle," said Guppy peevishly, "but no law of physics says I have to like it."

Steve Ransom grinned sympathetically. Sometimes Guppy seemed almost human. Too human.

"I'd offer to share my lunch box with you," he said, "if I thought you could assimilate the grub."

"What have you got tonight?"

"Nothing special. I wasn't hungry. Just Braunschweiger on rye bread. Swiss cheese with holes. Cold beer."

"Why don't you eat now? I can slip into your mind and enjoy eating it vicariously. It sounds good."

Ransom grunted. "You'd just get vicarious indigestion, too. I'm not hungry enough to eat now. Besides, it's too early for supper. If I ate now, I'd get hungry before midnight."

"Haven't you any sense of hospitality at all?" complained Guppy. "Now you're even begrudging me what I don't eat. Oh, well, I always get sleepy after a meal. I'd rather talk."

"Talk to yourself, then. I'd be poor company tonight. Things on my mind."

Guppy guffawed, rattling his speaker. "I know what things, too. Always hiding behind a woman's skirts. Coward, that's what you are!"

"Drop dead, jellyfish! One more crack like that and I'll put itching powder in your aquarium."

Liquid churned spasmodically in the tank. "That's what I like about you, Steve, when I like you at all. No need for company manners between us—in fact, no manners at all. No nonsense and sometimes no sense, either."

Steve Ransom opened his mouth, but restrained himself.

"That's right, boy. Better not say it. There are depths beyond limits even in a friendship as deep and muddy as ours." Guppy decided he was pushing things a little too far, so he changed the subject. Bodily.

Humming a little tune, Guppy spread out his cilia in all directions like a whisk-fan of copper wire. He revolved dizzily.

"Look, ma, I'm dancin'," clattered the speaker. "No hands. No feet."

Ransom laughed.

Actually Guppy was beautiful, after his own strange fashion. There was nothing comparable. He looked like a piece of complicated jewelry. The central portion, mostly brain, was a globular mass of convoluted folds, all brilliantly colored and sometimes self-luminous. Downward dangled, except as now when he was

exercising, an immense mane of shining coppery hair or nerves or wiring. And upward rose tentacular arms, a whole complex of them, glittering like strung jewels in translucent gem colors. Midway along each arm or tentacle were smaller folds and flowery nodes, some tightly curled like buds and others flung open like wildly colorful tropical blossoms.

When Guppy danced, his pirouettes sent ripples of tinted light among his involved forms, and current built up somehow until his tank became a pool of shimmering radiance, lighting the whole underground jungle of his domain.

If he tired of exercising, or merely lost interest, Guppy relaxed at once, all over the place. His cilia drooped, their coppery highlights dulling as if oxidizing rapidly, the upthrust tentacles went slack, light dimmed throughout his odd being, and his body drifted aimlessly with whatever currents his activities had stirred into the tank fluid.

But this time, instead of relaxing visibly, Guppy prowled restlessly about his aquarium. In key to this mood, Steve Ransom shut off the lights set around the otherworldly garden filling the cavity of the asteroid. Sometimes the eerie but cramped landscaping of the place got on both Ransom's and Guppy's nerves. The complex it gave them was like claustrophobia.

Living with the "monster," sharing its casual and aimless conversations, perforce letting it share one's inmost thoughts, even sharing lunches with it, though vicariously, was a mental hazard. It was almost too much for a plain, ordinary, average, garden-variety of mind like Steve Ransom's to bear. Prowling the vaulted garden, as restlessly as Guppy prowled his glass-enclosed saline swamp, Ransom felt the pressure of trying to preserve sanity in insane surroundings.

Curiously, they made a pair, often in tune with each other's moods, as often harshly out of tune, and far too often way out of tune with everything else. Ransom knew very little about Guppy technically, and cared less. Guppy knew mathematics and logical progressions and random factors better than anyone else. And both Guppy and Ransom were random factors.

In the dark, Steve Ransom sensed faint sounds of movement somewhere within the garden. Knowing every cubic inch of the place, with mental blueprints of every plant, every tree, each bush and flowering shrub, Ransom moved surely to stalk and intercept the intruder. Actual attack was unlikely, practically impossible through the system of alarms and electronic traps, but wherever man goes, so go his plagues, and a rat might have gained access to the sanctum.

Warily, Ransom bracketed the sounds, approached them. Tensed, he almost committed an act of lese majesty, if not mutiny or high treason. Fortunately he aimed a flash-beam before anything more lethal.

He breathed a sigh of double relief. No menace. And no difficult explanations he would have to make to Colonel King.

"Oh, it's you, kid," he said sharply.

Colonel King's ten-year-old son, Billy, gulped hard on silence, nodding. "I just thought I'd come in for a while."

"Well, I guess it's all right, since it's you. But you have no business here. You could get both yourself and me in a lot of trouble. You know that, don't you?"

"There won't be trouble. This time I asked Dad. He said I could stay for a little while. But I'm to be back early."

"Yeah! Better make it a short one tonight. The animal is restless. His Nibs in the tank is on the prod, wanted me to feed him real food. Imagine!"

"Maybe he's hungry. Or just lonesome. I get lonesome out here on the asteroid. Why shouldn't Guppy?"

Ransom turned on lights and led the way through tangles of vegetation. Billy stepped close to the tank and rapped sharply on the glass to arouse his friend. The boy stood, nose flattened against the cold surface until Guppy responded by rippling through a display of blues and bronzes and greens and yellows.

"Too bad tourists are never allowed in here to see a show like that," commented Ransom. "He's really spectacular when he starts running through the spectrum—"

"That's how he shows his feelings," interrupted Billy. "He has no face like ours, and no voice but that sound he makes comes through the speakers."

Guppy approved the sentiment by making himself into a living geyser of colored fire, high-keyed, running to yellows, pastel reds, pale blues and paler greens, all ending in a shower of white sparks.

"See," said Billy eagerly, "that's how he laughs."

"You really like the creature, don't you, kid?"

"Sure, don't you?"

Steve Ransom felt sudden self-consciousness. Delicate thought tendrils probed into his mind, and he knew that Guppy was inside his secret thoughts, laughing at his naked soul, enjoying his embarrassment.

"There are times," Ransom stated firmly, "when I think I almost like the brute, and then he does something that makes me want to tangle my fingers in that hair of his and twist till he hollers uncle. This is one of those times."

Billy King stared wonderingly at the guard. With boys, as with other primitives, everything is black or white, you must be for them or against them.

"You don't like him getting inside your mind," guessed the boy shrewdly. "You don't like him thinking with you. That's it, isn't it?"

"Kid, you've hit the nail right on the thumb. I don't like him getting inside my mind, period."

"You shouldn't mind. He doesn't mean any harm."

"Maybe, maybe not. What kick do you get out of him?"

"Oh, lots of kicks. All kinds. I like to look at him. He's pretty, and the way he floats in the water, that's pretty, too. When I feel lonesome, I want to come in and be near him. I feel inside my head that he wants me to come, and then I'm not lonesome any more. He likes to look at me, too."

"Sort of mutual admiration society, huh?"

"Sort of, I guess. I'll tell you something if you promise not to tell . . . ever."

"Blood oath stuff? O.K., kid, I'm sworn."

"Well, it's maybe not important. But I know without coming in here when Guppy's asleep. And he knows when I'm asleep. He comes to me when I'm asleep in bed. I've often been dreaming with him, and it's such fun. Do you ever go dreaming with Guppy?"

"Can't say I do. I don't dream much. On duty, I'm not supposed to sleep. Have to keep my eyes open."

"But the wideawake dreams are the best. They're much better than microfilm comics."

"What kind of dreams?" asked Ransom dubiously.

"All kinds. Stories, sort of. Guppy has no dreams of his own, but he makes mine realer. I don't mind sharing with him. We go places I've read about, or been told about. Places that I've imagined, or even seen on film tapes. Dreaming real with Guppy is much more exciting than ordinary dreams."

"I'll bet."

Eerie chuckling floated from Guppy's remote control speaker. Ransom found time to wonder what hookup the creature used to create such sound. Chuckling was not a normal function with Guppy.

"I guess I'll go now," said Billy. "I don't think Guppy's in a good mood for play."

"Maybe you'd better, kid. Never stretch a privilege too thin. But I'm glad you came by tonight. Cheered me up. I was feeling a bit curdled myself. I doubt if your pal and I are always the best possible company for each other. And be a little careful about those dreams you go on with him, will you?"

Billy King chuckled, a smaller and more innocently human sound than Guppy's mechanical gurgle.

"Maybe I can slip back later, just for a minute—if there's nothing special on the Bombay telecast. If I don't get back, though, say good night to Guppy for me."

Ransom bobbed his head in promise. He watched the boy melt into the shadows, then marched to the tank. His knuckles beat a sharp tattoo upon the glass shell. It was the one thing he knew which could really upset Guppy. Colors flamed in dark water.

"O.K., give!" Ransom ordered. "What kind of dreams?"

"Going to read me the riot act, eh, Steve?"

"That depends. I don't want you stuffing that kid's head with nonsense. Boys are pretty sensitive beings, but they seem so indestructible it's easy to forget that. Colonel King and the kid's mother set a lot of store by Billy."

"So do you. And so do I, for that matter. What's wrong with nonsense, except that it makes better sense than the big fat world around us. Why don't you mind your own business, Steve? Billy and I get along fine."

"Come on, now. About those dreams—" Ransom's hard knuckles set up hard, glassy vibrations.

Again that eerie chuckle clattered from the speaker.

"O.K., Steve, you asked for it. . . ."

Sunlight spangled the sea. Whitecaps drove before a light breeze. Foam burst around Ransom's face as black water rose higher and higher, swallowing him in a vast flood. They sank at a steep angle, he and Guppy. Sank through deep water that was bluer and darker layer by layer as they went down. Light grew fainter, color faded but form remained. Immense, sweeping forms of plants and sea-animals moved in swirling patterns which seemed part of the submarine currents. Myriads of sea-beings cavorted about them in the dimness. Surroundings became an undersea travelogue in which everything was more mysterious and remote than one would expect to find anywhere on Earth. Some of the swimming wonders were small, some large, some self-luminous, others darker than the dark water.

Ransom had never visited an ocean bottom, but it seemed startlingly real, and exactly as he would have imagined it.

Then came other dreams. Two mad riders mounted horses whose outlines were palest-white fire. Together, they roved the starways, trod the dark, soundless emptiness of space. Storming the citadels of eternity, they trampled the far, glittering fields of suns and supersuns. They saw the blinding, raw, spreading dazzle of a nova, and witnessed the birth of a system of planets.

They roamed far and wide in desolation and chill loneliness. In empty, echoing darkness they heard sounds which had never troubled the air of familiar worlds. They saw spaceships of strange design with stranger crews, coming and going, weaving gigantic patterns of fading fire between alien stars. Together, they visited and explored planets circling unknown suns, moving through deep, luxuriant jungles a-swarm with exotic life and more exotic death. There were infinities of worlds, some as unlikely as Earth, and a few more so.

They traveled across burning deserts of molten and near-molten metal, as on Mercury. They knew the shifting mirage which tortures mind and body on Venus. There were endless, waterless and almost airless wastelands, as on Mars, which Ransom recognized from personal experience. There were large planets, nearly

bodiless, chiefly atmosphere of poisonous methane and ammonia, like Jupiter and Saturn and Uranus. There were dark, cold planets and moons, where unearthly substance takes unearthly forms, like Pluto and Neptune, and Neptune's moons.

Somewhere in the wanderings, Ransom fled in fear from overwhelming armies of insects of all sizes and colors. Somewhere, he heard faintly the timeless siren song of star-maidens, singing in wordless wonder of lost emotions and thoughts and the yearning for far places. Somewhere, Ransom fought and ran, and fought and ran, and fought and ran again, without ever knowing clearly what menaced him, or rather his roaming dream-self.

Exhausted by wonders, he dropped quickly back to Earth. But dropping, he found himself alone, the last man alive in a crippled spaceship, with power cutting out and slamming on, both too erratically for control. Outside the ship was high, whistling scream of atmosphere-friction, and inside, temperatures rose and rose and rose until his skin curled away from the thin double-shell of metal. Ransom somehow got himself into an air lock, shooting himself free of the ship, still high above the clouds. But the 'chute would not open, and he spun dizzily, falling and spinning, falling and spinning. A vagrant whirlwind caught him up like a dry leaf, whisking him aloft, down and up, down and up, whipping him lightly and gracefully as a feather. Until it let go, twenty feet above a black, solid expanse of ocean.

His flailing body struck water hard. Breath bounced from his lungs. He threshed and churned in the water, which was numbingly cold. Desperate gymnastics kept him barely afloat, but his clothing hampered his attempts to swim. He started stripping, jerking off tunic and shirt, dragging at soaked uniform pants.

Sunlight spangled the sea. Whitecaps drove before a light breeze. Foam burst around his face.

Cold and shivering, half-naked, soaked, Ransom stood in Guppy's garden. Real water dripped from his remaining garments. The rest lay in a soggy heap.

"You asked for it, Steve," said Guppy pleasantly. And his metallic chuckle rattled the speaker.

"Some bright day somebody's going to pull the plug on you," said Ransom reproachfully. "I hope I'm here to see it."

"Sore, Steve?"

"Not too sore. I asked for it, as you say. Well, I guess I'll have to change uniforms. This one got loused up. But you'd better soft-pedal those dreams for the kid."

. . . There had been no intention, originally, to keep the monstrosity alive for any indefinite period. The proposition was for various experts to study it in various ways, neurosurgeons to dissect it, and biologists to analyze what was left. But signs of organic change appeared so rapidly and developed so unexpectedly that even the professional meddlers

were startled into leaving it alone. Guppy took off on his own tangent, quickly doubling in size and activity. At first, nobody was aware of other, more drastic internal changes.

Furry growths sprang from the thing which had resembled an ordinary human brain. Fur developed into silken strands with metallic sheen and color, writhing with life, trailing like wind-blown moss as the curiosity moved within its vat. Experiments, such as minor variations of nutrients, were tried. Some were not to the creature's liking, and it made the fact known by stiffening the masses of cilia until they radiated from the central core in wire-like explosion. These primitive reactions eventually became the basis for communication of a sort, semaphoric "yes" or "no" developing into signal pattern, growing more complicated, ending in a usable vocabulary.

The first fact learned from Guppy was that a functioning brain is a conscious brain, hence an identity, even a personality, and the surprise is that it was a surprise to anybody. Armies of technicians took over, government took over. Guppy developed his small talent into a political issue. He was considered first a treasure, second a potential weapon should he fall into the "wrong hands"—which of course meant any hands other than those clinging by virtue of the *status quo*. There is always an enemy, traditional, cultural, economic, or potential, and if there were not, it would be necessary to imagine one. No nation or world has a more valuable asset than its current bogey man. Unless it has Guppy.

Hands—military, political, scientific—clinging to Guppy with greater and greater dependence, found him faster and more reliable than any other computing device. He could answer questions of types which sent electronic brains into the mechanical equivalent of catatonic dementia. With Guppy, there was no danger of short-circuits, power cutouts, tube failures, transistor limitations, or those eerie neuroses to which electronic complexes are prone. Guppy demanded no elaborate codes and no mathematical formula reduced to a punch-tape system; his thinking was clear and direct and flexible, where an electrical circuit is necessarily rigid.

When asked unanswerable or patently stupid questions, Guppy did not retire into silence. His response, through remote-control speaker, was a rhythmic sputter remarkably like a Bronx cheer. Guppy, generally speaking, which he usually was, became quite a character. . . .

(Conversation in the dark between GP37B,9992,0434 and Stephen Ransom, guard, automatically recorded on tape.)

"Come over here, Steve. I want to talk to you."

"Come where?" *Irritably.* "You mean by the tank or close to the speaker?"

"By the tank, stupid. I'll step up my voice a few decibels, so you can

hear me. But this is a confidential chat between friends. We are friends, aren't we?"

"That's debatable."

"I'll prove I'm your friend. By giving you advice about yourself you don't want, and probably haven't sense enough to take."

"Advice! What about?"

"You have something on your mind. I won't ask what it is, because I hate wasting energy. You already know. Being telepathic, so do I. Chum, you have an anxiety complex."

"So I have an anxiety? What's complex about it? I can think of a great many things I'd rather do than lie on a psychiatrist's couch while you analyze me."

"Sure, and I'll bet we're both thinking of some of those things right now. Stop blushing, you're beginning to radiate in the dark. Infrared range, I'd say. I know all about you and that girl. You go to sleep thinking about her and wake up with her still on your mind. I even know why you never get beyond thinking about it."

"Then you know more than I do."

"That's not debatable. Anyhow, I know enough about you and about other people to know that what you think is a big private mystery has everyone snickering at you behind your back. I haven't eyes, but I can see through you like a fluoroscope. Better, because that shows only shadows, and I see substance. I understand both."

(Censored)

"If you ask me, which you haven't, I'd say it's high time you stopped thinking and took action. You're a big boy now, and the future won't wait. Neither will she. Not only is that girl a real armful, she's a real handful. Maybe too much of both for a plugger like you, but it might be interesting, just finding that out."

"Maybe I'll eventually get used to these invasions of my mental privacy, but that time is far off. If you had a nose, I'd suggest you keep it out of my affairs."

"Affairs? If you had any, I would. Not that I'm so interested in you. I'm only protecting myself. Telepathically, I have to live with you. Brother, you bore me. Your frustration frustrates me. I like happy people around me, like Billy. And you, my fine featherless friend, are downbeat."

"You pull one more stunt like that ducking trick, and you'll be downbeat yourself. So you entertain yourself by dipping into my mind. That's entertainment for you, such as it is. Why should I care if you enjoy yourself in my mind. It's none too comfortable there for me. And with you elbowing in, two's a crowd. Nobody pushes buttons to select the kind of entertainment he gets from my mind. Take mine-run, or nothing. You can always get out and stay out."

(Persistently) "If she wants money, Steve, I can fix that up for you. I can tell you how to make a mint. Any time you say."

(Touched, but shocked) "Thanks,

but no thanks. I couldn't take help of that kind. I took an oath never to use my contact with you for personal advantage."

"Why not? Everybody else does. Nobody pays me a salary. I can help a friend if I want."

"You can't help me. If she won't have me as poor and stubborn as I am, she won't have me at all. Don't think I'm not grateful, but I can't—"

"Exactly the proper attitude, for a proper blockhead."

"So we'll both have to get used to my frustrations, maybe all three of us. You don't mind if I call you Guppy, do you? Everyone else does."

"Mind! Why should I? Nearest thing I have to a name. Simpler, and politer, than running through the numerical rigamarole, or yelling 'Hey, you!' "

"Now shut up and go to sleep."

(Tape ends)

(Later conversation, the same night)

"Martians! You've just been exposed to too many of those corny microfilm comics. I can't figure how—"

"No problem there. I live here, have been here all the time. Workmen brought them along while they were working over this phony asteroid. During coffee breaks and lunch hour, they projected them, right up there on that wall. The joint was really jumping with them. You know mechanics and gardeners, and such. That's where I got this fancy vocab-

ulary of mine. You're just lucky I don't really let loose with all the words I know. I can cuss in fifty-three languages, not counting Esperanto. And my Basic English couldn't come any baser."

"Look, Guppy. It's nearly eight now. Earth-Greenwich standard. Four hours left of my shift. I'll make a deal with you. You talk for two hours of it, then I'll put my nickel in the slot for two hours of silence. Don't you ever run down?"

"If I do, a dietician gets canned."

"Might be worth it."

"What a pal, what a pal! You're all I've got and what are you? I could compose a song around that. Want to hear it?"

"Not if there's any price I can pay to avoid it."

"Billy King should be back about now. If he's coming. Said he would, didn't he?"

"Said he might, if he got a chance before being sent to the sack. Maybe, like me, he's had all he can stand of you for one day."

"That kid is really a card. All boys like melodrama, but he wallows in it. Last time Earthside, his dad took him on a roller coaster. He remembered to dream about it after he came back, just to share his thrill with me. Wow!"

"I hope you remember not to clutter his mind with microcomics."

"Am I my keeper's brother? Temper the lamb to the shorn wind, I say. Toughen him up, but gradually. You've been on Mars, haven't you, Steve? What's it really like? I have all the data, but statistics are so sterile."

"So is Mars. Air's very thin and poor in oxygen. Like trying to breath on top of a thirty-two thousand foot mountain on Earth, if there were any. Wind and sand, mostly. Few blobs of weathered rock sticking out like stale, squashed gumdrops. Color bleached out everywhere by the kind of light you get. A dirty purple sky and a shrunken sun. Not even the Martians like the surface."

"Martians? What are they like?"

"Like Martians, I guess. I saw only the trading-post Martians. Nothing like the critters of the comics. Just people who look as if they had been buried too long. Everything on Mars is built underground, air sealed in, cities and all. Martians are human, I guess, but I always feel that somewhere a cockroach got into their woodpile."

"Are they as arrogant and stupidly ignorant as folks on Earth? As you, for example?"

"Trading-post Martians seemed sullen, sour-faced, and servile. They call it politeness. Arrogant, though they try not to show it. Wouldn't want to wipe their feet on us, but only because they like their feet too well. Same faults and stupidities as ours, but somehow crawlier. My opinion."

"You paint a grim picture. Maybe you just don't like them. Wouldn't you feel miffed if Martians established colonies on Earth, and acted as if you were natural inferiors? Wouldn't you try not to show

it, unless you could get in a lick that counted? Though I suspect you'd be more arrogant than polite."

"I hadn't thought about it like that. But there's no danger of Martians taking over. Not enough initiative, and not enough Martians. It's been twenty years since a Martian left Mars for any reason. They like it there, which disgusts me."

"Suppose some did leave? Suppose they came here to this asteroid, on a raid. Suppose they came to steal me away to Mars. Same kind of deal as this. Everybody picks my brains and I get ulcers while they get fat. What should I do about it?"

"Forget about it. Anybody comes to steal you, he runs into trouble. You're protected like Fort Knox, only better."

"Give it a quick run-over. Exactly how am I protected?"

"Outside are mass-proximity alarms. Then there are robot sentinels which challenge everybody. Unless they get the right coded response to signals, automatic batteries start blasting. On the surface, if anyone gets that far, are more of the robot guards and guns, plus electronic deadfalls. Inside the air lock and on the elevators, they are caught in crossfire. And the tunnels below have more trouble for them—trip-guns, electrified barriers, all kinds of electric eye traps, and a water jump which would stop any Martian. Finally, right in here with you, there's me."

"You! What could you do?"

"Plenty. I'm armed and—"

"Better do it, Steve. Here they come!"

(Tape ends in a explosion of shots and shouts, grunting sounds, and the smash-jangle of breaking glass)

Steve Ransom wakened to darkness. By instinct alone, he would have known he was on a spaceship. By the cringing of his olfactory nerve, he would have known it was a Martian ship. Additional evidence was supplied by the staleness of the recycled air, by its thinness, by the less than G-normal gravity, by the curious stillness in which all the minute sounds and vibrations of a ship in space seem intensified.

Who ever heard of a Martian spaceship? But who ever knew what went on in those fantastic cities underground on Mars?

"Hi, Steve!"

There was nothing to see. No actual sound to hear. The illusion of sound was only electrical impulse inside Ransom's head.

"Who's nutty now? I said Martians, so we have Martians. What do you think of their politeness now?"

"Guppy! Where are you now? I'm surprised you're still alive. When your tank smashed, I thought you were finished."

Guppy snorted. "I'm O.K. You think, with all my many talents, I can't carry sufficient of my environment along to keep going wherever I go? That water trick I played on you should have given you the hint. But I don't like it here. They've got me in a new tank. Too small and too

salty. Makes me feel caged-up and stinky. I could get neurotic over a deal like this. Why don't you come and get me?"

"Sure, why don't I? I'll tell you. I got kicked in the stomach and knocked on the head. I feel lousy. While I was still out, somebody dumped me into a small closet. I'm not tied, so I can feel bulkheads about arm's length in every direction. I can feel a door, too, but it's locked."

"Ever picked a lock? Never mind. Just kind of edge over in that two-by-four brain and give me space. I'll pick the lock."

"Get out of my brain, jellyfish. I'm trying to think of a way out of this mess."

"You leave thinking to me. I'm better equipped for it."

It was a crude lock. Tumblers lifted and fell into the sequence. Mechanism clicked. The door swung open.

"Now, come and get me," ordered Guppy.

"Go chase yourself. First, I have some assorted Martians to deal with. I'll figure a way to rescue us and get you back to Earth. But in the meantime, you sweat where you are."

Guppy giggled inside Ransom's mind. Soundless, it was worse than the mechanical caricature of sound.

"Still in there pitching, aren't you? Didn't do so well before, for all your big mouth. Go on, then, and play hero. You may look awfully silly without those big front teeth. Come to think of it, you look silly with them."

"I suppose you could do this job better?"

"I could. But nobody's paying me to be a hero. Just do it your own stupid way, and I'll go along for the ride. Did they hurt you much, Steve?"

"Oh, no! Only my feelings and about four thousand assorted cuts and bruises from head to foot. They were too polite to kill me the easy way. I'm sure you got a kick out of it."

"Rousing while you lasted. Eight seconds, give or take a little. I got halfway through my spectrum."

"Give and take quite a little. I think I put three or four of them in the hospital."

"Two," said Guppy. "Nine to go. Two asleep, or maybe hibernating, since I imagine that's what Martians do. Six in the control room. Another heading this way along the corridor. With a gun in his hand. Let's go hunt Martians before they find out you're loose and start hunting us."

Ransom was trapped in an open corridor, no doorways handy. He dodged sidewise as the Martian appeared. Gun flamed. Blast seared Ransom's cheek. Then he was crouched, running, head down. He butted the Martian, rebounding into a bulkhead with sickening jar. But the Martian was out of action, folding to the deck as Ransom snatched the gun from his hand. To make sure, Ransom kicked nimbly and accurately at the prostrate figure.

"Careful with that firearm," warned Guppy. "At close range, those things pack a wallop. Air in this tub is thin enough now without blowing holes in our surroundings."

"Who's handling this war, you or me?"

"Both of us, at the moment. We're teamed, like a spirited horse and a spirited jackass. Do you actually think you can handle six full-grown Martians by yourself?"

"Not by myself. Me and my gun. And I'm still trying to figure how a raiding party of Martians got past all those defenses without raising an unholy row."

"Easy. Things were dull, so I let them in."

"All I need is a treacherous ally like you. Fighting a war party of Martians, with you right inside my brain."

"And that's not all the trouble you have. Behind this spaceship is a large hunk of Earth's spacenavy, waiting to move in and blow us out of space if it looks as if we're escaping."

"Why don't they close in, and—"

"Valuable hostages. I didn't want to worry you, but Billy King picked the wrong time to come back. He's locked in a closet just like yours. But enjoying himself. He thinks he's right in the middle of the best microcomic imaginable, and he's waiting for the good guys to do something."

"Poor Billy. No Earth commander would hold off and let the Martians steal you, just for Billy's sake, or mine. Billy's own father would give the order to fire, if he had to."

"I know that, but Billy doesn't. Anyhow, the Martians know it, which is more important. Besides, you and Billy are not the real hostages. I am."

"They won't hold off, even for you. They'll think it over, and regret the necessity—but that's all. Which leaves the miracles up to me, with a narrow deadline to work on."

"Narrower than you think," mused Guppy. "This is a faster ship than any Earth fleet ship. Right now, it's about at the limit of effective range. They won't wait much longer. So, if you have anything in mind—"

Steve Ransom's jaw set grimly. He moved quickly and quietly through the corridor and up the ladder well to the control room. The corridor was dim, and the ladder well dimmer as far as the trapdoor opening into the control room.

Ransom made one big mistake in forgetting that Martians are used to near-darkness. Underground, in their cities, tunnels, caverns, they use chiefly infrared light, for their vision overlaps considerably, and at trading posts on-surface, they always wear dark glasses.

Boldly, but blind as a bat, Ransom poked his head up through the opening. He could not see six Martians. He could not see any. He fired at random, hoping that the flash would reveal clearly even one Martian. It did, but not by any means soon enough. Nightblinded by the flash, he felt a booted toe crash into his

face, felt teeth break, felt consciousness reel as he fell.

Down the ladder well he went, striking solidly against metallic laddering, rebounding into emptiness. He fell, but not too hard or fast, since Mars' gravity is less than one G-normal. Bruised and shaken, he picked himself up and started climbing the ladders again, gun in teeth—in part of his teeth.

He tried to remember the exact position of each enemy as seen briefly during the flash of the one-shot war. He came again through the open trapdoor and into the control room.

It was still dark. He sensed soundless menace about him, nothing tangible, but only the cockroach-horror of Martians coming at him through the darkness. Also, he sensed lessening pressure in his brain, as if Guppy's thought form was leaving him for safer lodgings elsewhere.

He saw something luminous streaking through the dark, something like radiant tendrils stretching out, striking like thrown spears. By faint light, or by raw nerves of his mind, he saw them pierce huddled forms in various directions.

Ransom never remembered, during the years he had been on Mars, hearing a vocal sound from any Martian. If they talked at all, with traders or colonial officials, it was by some sign language, and was highly unsatisfactory communication.

But now, and for as long as he lived, he would never forget the sounds made by six full-grown Martians screaming in chorus. He never learned the kind of dreaming-real that Guppy inflicted upon the Martians. But anything which could be as horrible as that to six Martians at once was something Ransom had no desire to experience. Or dream, real or otherwise. . . .

There was no trouble about taking over the ship. No trouble from Martians, that is. Guppy had ideas of his own.

"Why go back to Earth at all?" Guppy demanded as Ransom was busy rigging signals to the Earth fleet.

"What do you mean?"

"Why go back at all? The universe is wide. We have a ship. I can persuade the six Martians to do anything we want, if I ask politely and forcefully enough. The three of us can have such fun, as Billy puts it."

"That would be forgetting too many things. Billy has parents who need him as much as he needs them. I have a girl on Earth, who just might miss me. Also my sworn duty. I don't know what you have anywhere, outside of some very peculiar peculiarities. But I have no choice about calling in help to take you back, by force if necessary."

"I was wrong about one thing," admitted Guppy. "Not about going back. I'm still not going. I was just wrong about you. You do look sillier without those front teeth. That poor girl is in for a nasty shock, unless I can save her from it."

"You can't," argued Ransom.

"And I can buy a whole mouthful of teeth when we land back on Earth. She won't dare mind too much, since she wears falsies herself—uppers and lowers."

"Still determined to take me back?" mocked Guppy. "By force, if necessary?"

"I have to," insisted Ransom, wondering what kind of dreaming-real ordeal he was in for. "I swore to protect you with my life. And to kill you rather than let you fall into alien hands."

Guppy chuckled, without benefit of speaker. "For a non-profane man, you're the swearingest character I ever encountered. Aren't those propositions mutually exclusive? Protect me, you say, by killing me. You have some odd loyalties."

"Haven't you? I thought you liked Billy. Now you talk of kidnapping him. And me. And I suppose you think you can put pressure on me, make me agree with you."

"I can," agreed Guppy amiably. "And maybe I will. But not about Billy. You have a point there. Suppose I let you two go, and then take off on my own—with the Martians, of course. By the way, I know now what you meant about Martians. I feel as I should have detergent included in my diet—to get the icky out. But at least they'll do as I tell them."

Ransom changed tactics. "Look, Guppy, I know I was talking big, about forcing you to go back to Earth. I can't, and I doubt if the Earth fleet could. But Earth needs you, and I'll crawl, if that means anything to you, to get you to go back willingly. Frankly, you scare Hell out of me. But please come back, and I'm sure you can make your own terms. Mankind on Earth needs you to help make that next big step to the stars. And we aren't as bad as you think. You could help us be better, and even help us a few rungs up the ladder of evolution."

"I could, indeed," said Guppy dreamily. "You paint a rosy picture of man's future on Earth. But they bring roses to funerals, too. I am no real help, and I know it if you don't. I am the death and the sepulcher for any race grown too lazy even to think and dream for itself. It's not healthy for mankind to let me make its major decisions. I'm too much like a wife who knows all the answers and mothers her husband to death. Little calculators may save time and even help man a little. But a freak like me capable of doing all man's thinking, and much better, is no good for the race."

"It could be like that," Ransom said, understanding. "It doesn't have to be."

"My powers are not unlimited," countered Guppy. "They are limited to the final and terrible futility of telling the truth. And if mankind ever sensed the truth about itself and its universe, or had the courage and brains to ask me, that would be the end of everything. Better to live in ignorance than to have high walls around you to keep out the fearful facts. Truth never makes you free.

It prisons you within your limitations."

"Then you are determined not to go back?"

Guppy groaned audibly. "I didn't say that. Sure, I'll go back with you. But I make no promises to stay. For your good and mine, and for the ultimate good of mankind, I'll take off whenever I get itchy feet. And nobody, this is personal, better try to stop me, or I'll take him along wherever and whenever I go. The Earth fleet is closing in now, so you'll have to check your velocities to match, and trim orbits so they can come alongside. I'll look in on Billy and let you play hero by yourself. Stall off those press photographers, though, until you get some teeth."

Ransom grinned with ghastly vacancies. "The better to bite you with, grandma."

"And you'd better hold off the wedding, too, till you have your dental appointment," said Guppy, chuckling.

A vagrant wisp of thought sent Ransom reeling with sheer horror. He screamed louder and more hideously than any Martian.

"Oh, no, you monster. Get off the Earth. Stay out of space. Just go, and keep on going. I've had all I can take of your snooping. Three on a honeymoon? Never! Never, you hear?"

Somewhere in the deep recesses of his mind echoed a faint metallic gurgling.

THE END

THE ANALYTICAL LABORATORY

(*Continued from page* 83)

Now this time David Gordon had an uproarious item in his "Look Out! Duck!" . . . only Bob Heinlein was also present with "Citizen of the Galaxy." Results? Like this:

SEPTEMBER 1957 ISSUE

PLACE	STORY	AUTHOR	POINTS
1.	Citizen of the Galaxy (Pt. I)	Robert A. Heinlein	1.30
2.	Look Out! Duck	David Gordon	2.16
3.	Red Rover	Dean C. Ing	3.76
4.	Into Your Tent I'll Creep	Eric Frank Russell	3.88
5.	The Devil You Say?	Walter L. Kleine	4.75

A final comment: Some readers have expressed dislike (violent, in fact) of serials. O.K.; your complaints and protestations are accepted. I appreciate the unsatisfactory effect of incomplete stories. But look, friends . . . what should I do when serials consistently win first place in the An Lab?

THE EDITOR.

THE REFERENCE LIBRARY

BY P. SCHUYLER MILLER

THE MERITS OF MERRITT.....

It is the fashion these days for the critical wing of the science-fiction world to write off A. Merritt as "unreadable." They have to do this quite often, and very hard, because Merritt is, or was, a big target. When I began reading science fiction, he was already something of a legend, and nothing he published up to the time of his death did much to change our opinion—though I think most of us would have preferred to have him keep on in the wild, fine vein of "The Snake Mother" and "Dwellers in the Mirage," rather than switch to the modernized witchcraft of the two "Shadow" books. I know very well that I imitated him when I started to write, and that Jack Williamson did too—in fact, he was the leading candidate for Merritt's "successor," as if there could have been any such thing. Of course, the degree to which we and others later departed from this adolescent emulation is a measure of our growing professionalism as writers.

In the last few months Avon has issued or re-issued paperback editions of three of A. Merritt's "classics," including the only novel that has never had a hard-cover edition. They are, of course, "The Moon Pool," (T-135), "Face in the Abyss" (T-161 and my own favorite), and "The Metal Monster" (T-172). This trio gives you, for an outlay of $1.05 (plus tax, if you have one), the author's most celebrated book, his best one (though I also like "Dwellers in the Mirage") and his poorest—one that never appeared without changes of some kind. Get them, and you can decide for yourself what the shooting and shouting is about: I'm just contributing some random comments here.

First, a few more data. Merritt was, for my money, a better short-story writer than a novelist, though he grew more skillful as he went along. "The Moon Pool," his third published short, was in *All-Story* in 1918. The sequel, "The Conquest of the Moon Pool," ran as a six-part serial the following winter, and they were welded together to make the book in 1920. When Liveright re-issued this in the '30s, they made Merritt change the original German villain to a Russian. He—allegedly of malice aforethought—failed to make the change-over in at least one place in the book, but that's cleaned up in this p-b edition.

"The Face in the Abyss" is likewise the name of the original *Argosy-All Story* novelette of 1923, which is combined in the book with the sequel, "The Snake Mother" (1930). In the combining process, at least one minor character was dropped and there was, as usual, considerable rewriting. This uneasiness of Merritt's reached its peak with "The Metal Monster." This, I think, was his first complete novel —a sequel to "The Moon Pool," in that its narrator is again Dr. Walter Goodwin. The original serial, which seems to be the basis for this paperback edition, was one of *Argosy*'s terrific eight-part serials in 1920. I've never read this version. Hugo Gernsback ran a revision as "The Metal Emperor" in *Science & Invention* in 1927, where I first saw it, and it has had a number of other reprintings, usually with changes by the author or editor or both. It, and his collected short stories, have yet to see hard-cover publication, though far worse stuff—including my own —has had that distinction.

So much for the bibliography: it establishes, if you didn't know it, that Merritt got his reputation immediately after the first World War. He was of the pre-war generation and wrote for it, but he modernized very successfully right up to the time his last serial, "Creep Shadow," came out in 1934. His editorial work at *American Weekly* took too much of his time thereafter.

The basic charge is that Merritt is now unreadable. Out of curiosity, I've done some highly unobjective "objective" checking that casts a little light on this.

There is a certain self-made expert on reading and writing, Rudolf Flesch, who has worked out a couple of complex rule-of-thumb formulas with which you are supposed to be able to measure the "readability" of any piece of writing. I happen to disagree pretty violently with a lot of Dr. Flesch's ideas about what makes a book readable; his formulas certainly down-grade style to the vanishing point. However, most of the books we'd all agree are tough going get a low Flesch score, and the readable books score higher.

In his 1954 statement of dogma, "How to Make Sense," Dr. Flesch offers two readability formulas—one for an "r" or "realism" index, and one for an "e" ("communicative energy") rating. The first is supposed to measure the realism and specificity of the material tested; the second is a measure of its forcefulness and vividness. The scores are derived by counting and adding up words of various kinds, punctuation marks, et cetera, in a selection of exactly one hundred words length. You'll see at once that *what* selection makes a great difference—any passage of back-and-forth conversation almost automatically runs up a high "e" score, whereas a descriptive interlude on the same page will rank very low. Same author, same book, same page—and contradictory ratings.

I made a quick Flesch count of two passages each from "The Metal Monster" and "The Moon Pool"—in each case, what seemed to me to be a typical descriptive passage, of the sort that represents Merritt's writing to most people, and a scene of conversation and action. In three of the four selections I got a very *low* "r"—for realism—index, and a *high* vividness index. So far, the Merritt critics may be supported—he's unreal, hence unmodern.

But some interesting corollaries came out of the analysis, which I consider basically worthless, made as it was. We think of Merritt's writing as being full of gaudy color, and it is. It puts a Hollywood production of an "Arabian Nights" yarn to blushing shame, and makes an old-time Buz Berkley dance production look pallid. Now, one of the six elements that go into Flesch's realism index consists of color words—yet, in all four selections *Merritt got almost no credit for color.*

The answer to this seeming paradox also seems to me to be the key to Merritt's type of writing. To count in Flesch's "r"-index, the colors have to be specific and simply stated: red, yellow, blue, black. But Merritt prided himself on the great variety of his vocabulary, and throughout his books the colors are invariably described in synonyms and metaphors. "Emerald" isn't a color to Flesch; "green" isn't to Merritt. This one feature of his style destroys any possibility of his getting a high realism rating on his most vividly descriptive passages, because it also loses him the sixth or jack-pot factor in which you add

up all the words modified or individualized by these color-names.

An anecdote goes with this. Last winter, when the new "Moon Pool" first showed up on the local stands, I happened to be sitting at a lunch-counter next to a young stenographer-style girl who was reading it. I just might have made conversation —my Mowgli training was neglected —but she remarked to the waitress: "I can't read this. I have to look up too many words."

And there, I think, you have it. Merritt grew up in and wrote for a generation that was enamored of words. It delighted in large and varied vocabularies; it liked the *sound* of words; and its poetry was of the Tennyson, Wordsworth, Scott variety that was built on these things. It was also a generation to which far parts were, almost by definition, romantic and colorful. The East was the *mystic* East, and just about everything in it had to be wonderful. In fact, just about anything unknown was wonderful.

The essence of all Merritt's writing is in his use of these qualities. He fills his scenes with the gaudiest of colors, the most flamboyant of oriental-seeming music; his people are strange and exotic; his places are in this world yet out of it, in the unexplored corners where anything may be. He piles allusion on allusion, drawing them out of strange-sounding mythology—and the better-educated sector of his readers knew quite a lot about mythology in those days, and knew what he was talking about. (The authenticity of these allusions isn't essential, of course; Dunsany and Lovecraft made theirs up out of whole cloth.)

Our generation, on the other hand, has seen the far parts of the world—usually under military auspices—and found them dull, dirty, uncomfortable, and full of foreigners. The romance of unknown places is pretty well gone, except in science fiction. We have also lost our taste for words. Like Rudolph Flesch, we want our words and our sentences short and simple. We want them to refer directly to us, or to things we know. We want the realism of today's successful novelists, and the bare-bone cacophony of modern poetry. In fact, *Saturday Review's* John Ciardi covered the change pretty well when he said that *real* poetry is based on economy of words. The stuff we find in Merritt — and Tennyson—is not poetry but rhetoric, and we've no time for it in 1957.

If you accept this evaluation of what is good writing for today, Merritt is ruled out practically by definition. He used whole phrases and clauses where others, even in his own day, used single adjectives. He strung picture on picture, all painted with broad strokes of a dripping brush. I think Finlay could do a complete Merritt novel in a series of fantastic full-color tableaux and lose very little of the story: the successive scenes are almost like frames in a Technicolor, wide-screen spectacle.

This is why I like Merritt's short stories better than his novels. You get one terrific scene—the Face hovering in the abyss—the slug-people drifting in the Pit—the Dweller racing down the moon-path—and that's it. By the same token, the novels were better as eight-part serials than as three-parters, and better in three chunks than taken at one sitting. How much plantation cake can you eat at one time?

As he went on, Merritt put more and more human action and motivation into his books, and his "e"-index goes up accordingly. "The Face in the Abyss" is crammed with fascinating people and creatures, but in "The Metal Monster" very little really happens to the harassed characters: they just stand and look at a series of set pieces in which the metal creatures go through their calisthenics. The concept of metallic life was terrific for the time, and the scenes themselves were crammed with sound and color, but Norhala is no Snake Mother—she's not even Anita Ekberg.

I hate to believe that we have lost the love of words and the ability to enjoy their lavish use in painting fantastic pictures. This is why I still like Burroughs' Mars—the lush "Green Kingdom" in Elizabeth Maddux's book—Conan and Northwest Smith and the Gray Mouser. And the best of Merritt.

P. S. — My "r" score on the paragraph beginning "The answer" is high: There are five colors and eight pronouns. The vividness rating is way low—no conversation.

EYE IN THE SKY, by Philip K. Dick. Ace Books, New York. No. D-211. 1957. 255 pp. 35¢

If you want a frolic in the style of the old *Unknown,* one of the most fertile imaginations and nimbly fingered typewriters in the business have done it again. More far-fetched gimmicks have been presented as sober science fiction, but Mr. Dick makes no claims.

Something goes wrong during the testing of a giant new bevatron, and a group of on-lookers suddenly find themselves in a most peculiar world. They are, as might be expected, a highly assorted lot: Jack Hamilton, fired because his wife is accused of communist leanings; McFeyffe, the security agent who has dug up the "evidence" against her; a Negro guide who can't use his degree in physics because "we" just don't have good jobs for his kind; a clubwoman and her little boy; a retired general; a career woman.

The first—and best—part of the book deals with this group's misadventures in the utterly illogical world in which they find themselves, run by the vaguely Moslem disciples of the Second Bab, with the Eye of the highly personal, highly capricious One True God peering vengefully down out of a Heaven which Hamilton and McFeyffe presently visit via umbrella. Little by little they work out the logic behind the illogic: they are living in the distorted, psychotic mental world of the first of them to become conscious. They finally corner

him and knock him out . . . to find themselves in still another, ultra-neat, ultra-puritanical dream world. And so it goes.

The fun gets a little thin after a while, but it's fun if you can take an element of unreason in your reason.

BIG PLANET, by Jack Vance. Avalon Books, New York. 1957. 223 pp. $2.75

Here's another excellent SF novel from Avalon, if you are satisfied to enjoy yourself and don't demand social significance. The original was in *Startling* or *Thrilling Wonder* in 1952; for a wonder, credit is given.

What we have is a good, old-fashioned travel - among - wonders yarn, in which a small group of Earthlings crash on a planet overrun centuries before by assorted dissidents, who have set up the Galaxy's oddest assortment of splinter societies. They set out to make a 40,000-mile trek across the unknown face of the planet, beset by monsters, natives, and each other. It's as garish a string of beads as you'd hope to find, but it's good fun all through and the wacky society of Kirstendale must be experienced to be believed. Books like this may not win librarians, but they'll win readers.

THE INFINITE BRAIN, by Charles Long. Avalon Books, New York. 1957. 224 pp. $2.75

This one just didn't get to me. It's a rather confusing mixture of times and personalities—and apparently parallel time-worlds—in which one Andrew Galeko, tycoon, has taken off for Venus without the slightest ability to navigate or control his ship, leaving two partners behind. He comes to a richly deserved bad end, and presently finds himself living simultaneously—or alternately—in the rocket and in a far-future world in which he was brought to life after being rescued from a supposed centuries-long death. Entangled in all this is a communal mind, dominated by his old partner Hunter, which is sometimes hostile and sometimes friendly, and always confused and confusing. Maybe it was the heat, but before I got to the end, I just didn't care.

DOOMSDAY EVE, by Robert Moore Williams.

THREE TO CONQUER, by Eric Frank Russell. Ace Books, New York. No. D-215. 1957. 138+181 pp. 35¢

The Russell half of this double book was a serial here in 1955 as "Call Him Dead"; it's the story of a telepathic manhunt for three men possessed by aliens. The Williams half may have been from one of the Ziff-Davis magazines, where most of his stories have appeared; if so, no credit is given.

"Doomsday Eve" gives us a future war between the West and Asia, fought in western North America,

and with a mysterious "new people" as a third corner. Our hero is an intelligence officer who may have "new" powers of his own; there's a nurse who is clearly one of them; there's a hideaway under the mountains; there's an enemy raiding party, and a ghost town of renegades. Quite a lot happens, but it never really seems to add up.

MERMAIDS AND MASTODONS, by Richard Carrington. Rinehart & Co., New York. 1957. 251 pp. $3.95

This can't be passed off as just an English steal from Willy Ley's "The Lungfish, the Dodo, and the Unicorn," "Dragons in Amber," and "Salamanders and Other Wonders," although the author lists the first two of these in his extensive bibliography and quotes Willy in one place. The author is a popularizer of natural history and geology in his own right, and although his book covers much of the same ground, it has its own flavor and adds bits and pieces of evidence that Willy didn't have or didn't choose to use.

The author begins with five short chapters on fabulous animals and his ideas about how their legends arose: mermaids, sea serpents, krakens, dragons, and the phoenix-rukh category of fabulous birds. The next section contains some vignettes of historical geology, the third deals with living fossils such as the coelacanth, *Peripatus*—the worm that isn't a worm, gingko trees, and marsupials, and the last with extinction of species in our own time. There is one nice little note from our old science-fiction pioneer, Lucian of Samosata, which indicates that in the second century A.D. that erudite Syrian had seen or heard about marsupials—or invented them. Presumably someone had been in contact with America or Australia, or there were then marsupials elsewhere—possibly Africa.

If you've read Willy Ley's books, there's only a little that's new here. If you haven't, sample this.

SF: THE YEAR'S GREATEST SCIENCE-FICTION AND FANTASY, edited by Judith Merril. Gnome Press, N. Y. 1957. 320 pp. $3.95; Dell Publishing Co., N. Y. B-110. 35¢

Any fine, right-minded, red-blooded, loose-living SF fan who doesn't agree that Judith Merril's annual anthologies are the best in the field, belongs in Mozambique with the coelocanths. I'm pleased to report that a book-loving friend of the most impeccable good taste went out of his way the other day to admit he wouldn't have believed a woman could do it—let alone twice. Let's face it: with the decline of the Bleiler-Dikty collections, there's no real rival. Consequently, it's worth the extra money to get the hard-bound Gnome edition. Marty Greenberg has again had the original pages enlarged photographically, so that the book has big, clear, utterly read-

able type. I don't, however, like the jacket as much as he does.

As usual, the editor has roved far and dug deep for a varied and distinguished collection. The stories have come from such off-beat sources as *Esquire, Playboy, Harper's, Tiger,* and *Maclean's* as well as the established SF and fantasy magazines. Three are from this magazine, four are from *Fantasy and Science Fiction,* and there is one each from *Galaxy, Infinity, Future, Science Fiction Stories, Fantastic Universe,* and the British *Science Fantasy.* This should add up to eighteen items, of which one (Ray Russell's "Put Them All Together, They Spell Monster") is a satiric article on monster movies, somewhat shortened from *Playboy*'s version, and one is Randy Garrett's ballad review of Hollywood's treatment of John Campbell's classic "Who Goes There?," here entitled "All About 'The Thing.'" Let's not also forget the editor's review of the year's trends and her honors list, a round-up of blue-ribbon reading. Anyone else who wants to can put together a mighty good anthology from this list of left-overs.

From *Infinity,* John Bernard Daley gives us a disturbing picture of time-travelers from the remote past, in "The Man Who Liked Lions." Clear at the other end of the book, Zenna Henderson's "Anything Box" from *F&SF* is one of her warm, compassionate stories of children. C. M. Kornbluth's "The Cosmic Expense Account," from *F&SF,* offers Functional Epistemology as this season's answer to Cybernetics, Dianetics or General Semantics as a way of life.

First of the three Astounding entries, Theodore L. Thomas' "The Far Look," means well but doesn't quite come off for me: it's the story of the "far look" that men gain after a sojourn on the Moon. Gem of the book is a discovery from a British bank magazine, by way of the Canadian *Maclean's*: E. L. Malpass' joyous little comedy of the Welsh back country, "When Grandfather Flew to the Moon." Then, one after the other, we have two more stories of the sort this magazine does best: R. Bretnor's tantalizing "The Doorstop," and Algis Budrys' "Silent Brother."

An anthology without Asimov would be unthinkable these days, and he's represented by a short interplanetary yarn from *Future,* "Each an Explorer." Critic Damon Knight shows that he can write a good monster puzzle as well as tear poor ones to flinders in "Stranger Station" from *F&SF.* Robert Nathan's smooth "Digging the Weans" is in the mood and manner of J. A. Mitchell's 1889 lampoon, "The Last American": it shows archeologists of the far future stumbling over the interpretation of our times. I like Nathan, but I prefer Mitchell.

As I'm sure you know, the rambunctious all-male magazines have had a healthy content of good fantasy and SF. This time *Tiger* has contributed a short satire on advertising, Roger Thorne's "Take a Deep Breath." Another comedy, and one

of the best things in the book, is Robert Abernathy's "Garndma's Lie Soap" from *Fantastic Universe*: folks just couldn't lie when they'd had their mouths washed out with Grandma's soap. Mack Reynolds, undoubtedly writing from some far corner of the globe, has a beautifully done time-travel yarn in "Compounded Interest," which title tells the story—almost but not quite. It's from *F&SF*.

Sorry—I must contradict myself. I said a couple of paragraphs back that a British entry, "When Grandfather Flew to the Moon," is the gem of the book. That honor really belongs to another Britisher, J. G. Ballard, whose first S-F story, "Prima Belladonna," is one of the most unusual in years. It's well worth the price of the book—the paper-back, anyway. The British discovered it themselves and used it in *Science Fantasy*. The theme *is* the story, so I won't describe it.

Theodore Sturgeon is also a "must" in any anthology for any year in which he's written. This time it's "The Other Man" from *Galaxy*, which belongs with the best of his stories. It goes just a little way ahead to explore some new techniques of personality adjustment, with memorable results. Finally, Garson Kanin, director *et al*, sold *Esquire* "The Damnedest Thing," a beautifully done little comedy of what happened to an undertaker's assistant—neither science fiction nor supernatural fantasy, but a macabrely comical vignette of today's New York.

The cover of the paper-back says, simply: "*The* Anthology of the Year." I could have saved the printer ink and you time by just saying: "Ditto."

THE GREEN ODYSSEY, by Philip José Farmer. Ballantine Books, N. Y. No. 210. 1957. 152 pp. 35¢

I must be about the only fan now alive who was not either enthralled or appalled by the publication of Philip José Farmer's "The Lovers" back in 1952. The reason's simple: I've never read it. The story appeared just in time to go into a carton when I headed for Pittsburgh, and it's still there. The book that Shasta promised never appeared, and neither did the prize-winning Shasta-Pocket Books novel that followed. "The Green Odyssey" is, therefore, the author's first book in print—and I still don't know what all the shouting is about.

These are the adventures of Alan Green, spacewrecked on a far planet that is overrun with feudal human societies. He is the latest mate of an Amazonian slave, Amra, official leman of the Duchess Zuni of Tropat, and on the whole doing quite well in a precarious position when he hears that a rocket has come down in a far country, a few thousand miles away across the grass sea of Xurdimur. The two "demons" on the ship will be executed if they don't prove their innocence by dying first. So Mr. Green—the title is a pun—schemes valiantly to get him-

self to Estorya in time to rescue the Earthmen and hitch a ride home.

The plot, the settings, the trappings are strictly by Edgar Rice Burroughs out of Robert E. Howard (Amra? Zingaro?), but the whole thing is curiously flat and unexciting. It's as full of detail as an officially approved Russian painting, and adds up to as little. (Incidentally, though no sailor, I have my own doubts about how effective one steering axle would be on a roller-ship, where there are thirteen other pairs of wheels plowing straight ahead.) Miran, the freebooting merchant, should be a real character, but he isn't. Neither is Amra, with her brood of assorted brats sired by assorted nobility and others. Neither is Green. In fact, the only really likable character is a black cat-goddess with a taste for beer, picked up after shipwreck on one of the wandering islands of the Xurdimur.

"Rollicking science-fiction adventure," the blurb calls it: "uproarious" . . . "hell-bent" . . . "swashbuckling" . . . "sheer fun." These it is not, though it could have been. What *was* with "The Lovers" that blew up such a storm?

EASTER ISLAND, by Alfred Metraux. Oxford University Press, New York. 1957. 249 pp. $5.00

The will to believe the most fantastic of a group of alternative explanations is certainly a help to science-fiction writers, but it is an even more potent aid to occultists, lost-Atlantis cultists, and flying saucer passengers. Easter Island raises its dreary peaks above the South Pacific from time to time as the last real outpost of the "unexplained." It should, therefore, be of interest, if not good news, that a soberly scientific study of the island, its mysteries, and its people is again in print.

This book, subtitled "A Stone Age Civilization of the Pacific," is written by a distinguished French ethnologist who has also worked in Africa, Latin America and Hawaii. It is based on an expedition made over twenty years ago, in 1934/35, although its author has tried to bring it up to date by commenting on various studies—especially of the Easter Island script—which have been published since that time.

Let me carp first. This is by no means *the* book on Easter Island that we'd all like to see. It will not give you any very clear physical idea of the island, or what is on it; there are, for example, no maps. The most hair-raising events, from mayhem to cannibalism, are passed over on a dead level of scientific sobriety, as data for the files. Most serious, to me, is that you learn almost nothing about what the archeological division of the expedition may or may not have found. Metraux is an ethnologist, who studies living people, and he reports what he learned from and about them. This may be the result of a kind of scientific ethics with which I frequently quarrel: the view that Henri Lavachery must tell

his story of the digging in another book, if he chooses to do so (he has reported in French). It may also be because the archeological techniques of twenty-two years ago were not able to turn up anything informative—such as the traces of pre-European settlements that would give some idea of the uncontaminated Easter Island culture. One example: the obsidian artifacts called spear points are extraordinarily crude, and the little careful chipping on them is on the base. They *look* more like wood-working tools, which might have been used for the islanders' highly evolved wood carving, and we are not told whether the identification as spearheads came from the natives or is an assumption of Metraux, Lavachery, or some one else.

Nevertheless, the evidence of the Easter Islanders' own traditions and customs is quite clear. They did *not* come from Mu, Atlantis, Egypt, Sumeria or Peru. They are Polynesians, who speak Polynesian and have Polynesian customs with some colorful embellishments which may or may not have been present elsewhere. Their ancestors carved the famous statues out of rather soft rock, and set them up on burial platforms of the same easily shaped material. They reached a dead end on Easter Island, simply because they had no wood to rebuild the canoes that brought them there—Metraux thinks from the Marquesas.

There does remain one first-class scientific mystery to which Metraux devotes a full chapter, with a disclaimer pointing out that this isn't his field and he can't venture an opinion. This is the belief of some archeologists that there is a close similarity between the "script" that the Easter Islanders carved on scraps of wood, well into the eighteenth and possibly the nineteenth century, and the probably untranslatable script of the Indus Valley civilization of some four thousand years before.

Unfortunately, neither this book nor those generally obtainable on the Indus finds—e.g. Stuart Piggott's Pelican, "Prehistoric India"—shows you enough of the two scripts for you to form any ideas of your own. Metraux objects that the Indus symbols were engraved as single lines, whereas the Easter Island figures were outlined. T'ain't so—at least the symbols on the Indus seals were solid enough. He points out that whether the symbols were once writing, the natives certainly couldn't read them when discovered: they used the carved plaques as cue-sheets for chants, and one old codger simply described the symbols in his own language—"man with a club," "big shark," "frigate bird." But twentieth century Arab-Egyptians can fake antiquities with handsome heiroglyphs, without the slightest idea of what they mean, and through the Dark Ages of Europe many "scholarly" scribes seem to have copied old manuscripts in the same way.

Offsetting this, several specialists —which Metraux is not—are beginning, or think they are beginning, to

find connecting links from the Indus through southern China and the islands of Indonesia, which such a script might have followed. Tor Heyerdahl is on the island now: it will be interesting to see what his enthusiasm and diligence turn up there.

THE ISOTOPE MAN, by Charles Eric Maine. J. P. Lippincott Co., Philadelphia. 1957. 217 pp. $3.00

In case the title and author have made you wonder, this is one of those borderline borderline books. I borrowed the copy I read, and I'll probably pick one up if it's remaindered. After all, I'm a completist.

The lone qualifying gimmick in the book is that the scientist of the title, hauled out of the river with a couple of bullets in him, has undergone a "time slip" which has him answering questions before they're asked—seven and a half seconds before, the book says. To counteract this bright spot is the dubious pronouncement, on page 213, that tungsten "isn't an isotope."

"Hot-shot science reporter Delaney"—I quote the jacket—is on loan to a London picture magazine. Sent to cover the coming out of a maternity hospital, he ignores the assignment to follow his hunch that the man from the river is one Stephen Rayner, super-scientist. He must be the "Isotope Man": he's so radioactive, thanks to his routine work for the AEC and elsewhere, that he fogs film at ten paces. But a phone call shows that he's on the job, setting up a critical test at England's most important reactor. So Delaney, and girl Friday, proceed most diligently to louse up Scotland Yard's well planned campaign to straighten things out. I'm sure it will be a movie.

THE 13TH IMMORTAL, by Robert Silverberg.

THIS FORTRESS WORLD, by James E. Gunn. Ace Books, New York. No. D-223. 1957. 129 + 190 pp. 35¢

The Silverberg half of this Ace double is new, and, on the whole, isn't up to his best magazine work. The other part is an abridged version of the Gnome novel of two years ago, in which an acolyte of a future state church becomes involved with his conscience, a strangely powerful pebble, and all the social forces of his distorted world.

In the Silverberg novel, we find one Dale Kelsey, a farmer without a past, in a post-war-III world ruled by twelve immortal mutants who have risen out of the holocaust of the bombings. There is a mysterious 13th Immortal in Antarctica, and as the story opens one of his emissaries is about to take Kelsey back to the Pole to reveal certain secrets. It's a long trip, involving a maximum of intrigue, some bloodshed, and a chase that leads through cities of mutant monsters and monster robots. Just entertainment, but the combination is good at the price.

REPRINT COLLECTION

THE MARTIAN WAY, by Isaac Asimov. Signet Books, N. Y. S-1433. 1957. 159 pp. 35¢. Four novelettes and short stories, one of which first appeared here.

FROM OUTER SPACE, by Hal Clement. Avon Publications, N. Y. T-175. 1957. 188 pp. 35¢. A reprint of "Needle," the first and still one of the best of the author's Alien books. Although no credit is given, it was serialized here in 1949.

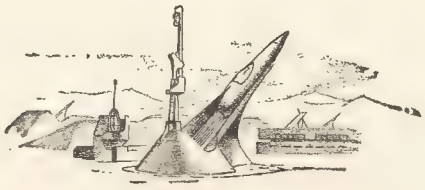
A TREASURY OF SCIENCE FICTION, edited by Groff Conklin. Berkley Books, N. Y. G-63. 1957. 186 pp. 35¢. Eight stories from the 1948 Crown anthology, one of the best. Six of the eight are from this magazine. You probably know them all, but it's a good sample for newcomers.

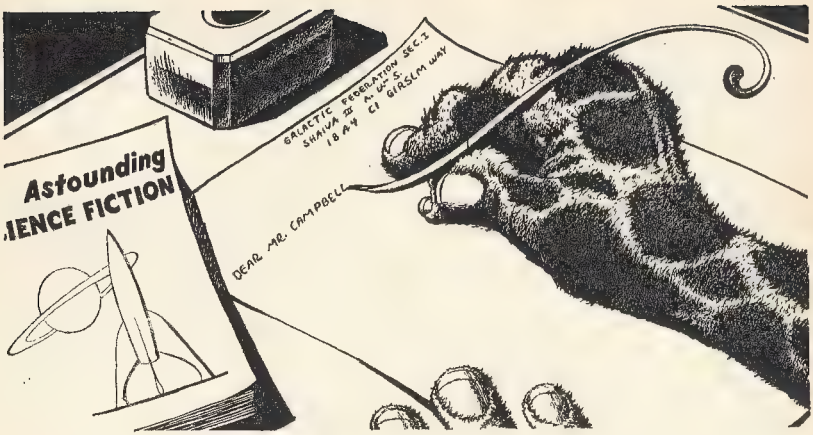
FEAR, by L. Ron Hubbard. Galaxy Novels, N. Y. No. 29. 1957. 125 pp. 35¢. Further evidence that Hubbard can be a very good writer when he bothers. This tour de force of psychological torment was in *Unknown* back in 1940. It's still good.

SPACE PLAGUE, by George O. Smith. Avon Publications, N. Y. T-180. 1957. 191 pp. 35¢. This p-b edition of "Highways in Hiding" is marked "Revised." I suppose that means it's been shortened from the Gnome edition: I haven't compared them.

FRONTIERS OF ASTRONOMY, by Fred Hoyle. Mentor Books, N. Y. MD-200. 1957. 317 pp. 50¢. This is the "bible" of the "new" astronomy — the steady-state cosmos, in which matter is continually created in open space to fill the void left by the expanding universe. It's essential reading for anyone who may have missed it. A warning: you won't be able to tell what's orthodox, what's reasonably supported hypothesis, and what's pure moon-shooting. Hoyle is a slick and thoughtful writer.

THE END





BRASS TACKS

Dear Mr. Campbell:

The Elves, Gnomes and Little Men Marching, Chowder and Science-Fiction Society is setting up a prize contest closing January 1, 1958 for the best song with a science-fiction theme. As for example, we suggest "When the Ants Come Marching In" to the tune of the well-known "When the Saints Come Marching In." Contestants are urged to use full liberty on theme and title. The Society has set up as prizes four cases of Scotch to be distributed according to the merit of the entries. Please send entries to the Society care of the Garden Book Shop, 2524 Telegraph Avenue, Berkeley, California. Judges will be local music authorities.—Julius Lucoff, 8143 Terrace, El Cerrito, California.

Hm-m-m—Know about "As Time Goes By"?

Dear John:

One slight correction to Poul Anderson's otherwise well-taken letter (ASF, 9-57) replying to Witcutt's letter (ASF, 5-57). It was not Robespierre who said: "*La république n'a pas besoin des savants,*" but his follower Jean Baptiste Coffinhal, presiding judge at the trial of Lavoisier. The statement was in reply to a plea

by Lavoisier to defer his guillotining for a few weeks to enable him to finish some chemical researches.

Poul might have added that anti-intellectualism, so far from being distinctively American, is an old tradition in all Western culture, if not in all human culture. It has existed side-by-side with and in conflict with intellectualism ever since the Dark Ages. It was Europeans, not Americans, who burnt Bruno and Serveto, blew up the Parthenon, put Galileo on the Forbidden Index for two centuries, burnt Priestley's laboratory, tried to lynch Papin when he attempted to build one of the first steamboats, beheaded Lavoisier and Bailly, staged the German book-burning of the 1930s, twice burnt the library of Louvain, burnt the two hundred thousand books and manuscripts of the Royal Society of Naples and Caligula's galleys in 1944, and shot the Russian geneticists Feri, Agol, Levit, Karpechenko, Efroimson, Serebrovskiy, and Filipchenko. (Not to mention Vavilov, who died in a Siberian prison-camp in 1942.)

Finally, while America no doubt has many shortcomings, it cannot be so hostile to science as Mr. Witcutt supposes, else there had not been, for a century and a half, such a steady stream of migration by European scientists to America to live, from Cooper, Priestley, and Agassiz to Einstein, Fermi, and Teller.—L. Sprague de Camp.

1. *Nobody likes being proven wrong.*
2. *A scientist is a man who develops powerful proofs.*
3. *Therefore, nobody likes scientists!*

Dear John:

You really posed a nice one in the question of how to rate the efficiency of a rocket fuel without reaching a result of several hundred per cent if you choose just the wrong planet for a frame of reference. I will add one remark: Calculated by the usual rules, the efficiency of a rocket is just zero at blast-off! Efficiency equals power output per unit power input; power input is so much—multiply available calories per kilo of fuel times fuel flow-rate in kilos per second; multiply by Joule's constant to change from calories to kilowatts, hp. or what have you—while power output P, in terms of rocket mass m, velocity v and time t, is:

$P = d(\frac{1}{2}mv^2)/dt = d(\frac{1}{2}mv^2)/dv \cdot dv/dt = mv \cdot dv/dt + \frac{1}{2}v^2 dm/dt = v(m \cdot dv/dt + \frac{1}{2}v \cdot dm/dt)$ and, since v, a factor of the far right-hand member of the equation, vanishes just at the start—the rocket isn't moving then!—so P vanishes, and so does the efficiency. Q. E. D. The same result is obtained for an automobile or any other vehicle starting from rest, provided the rate of fuel consumption does not also increase gradually from zero as the speed does.

I think we must first of all realize that efficiency is an anthropomorphic concept. One asks of Nature, "Here is a physical process—what's in it

for *me?*" Nature would very well answer, "It depends on your point of view. What is your frame of reference; the planet you're flying from, or the one you're flying to?"

Willy Ley in his "Rockets, Missiles and Space Travel" has a formula—without derivation—from Rudolph Saenger for the "outer" or "ballistic" efficiency of a rocket. This, multiplied by the "inner" or "thermodynamic" efficiency, gives the overall efficiency. The expression for the outer efficiency is:

$$E_{ball} = \frac{2\,v \cdot c}{v^2 + c^2}$$

—where c is the exhaust velocity of the rocket. I cannot derive it, but will note that it gives our rocket a zero efficiency for zero speed—as we said before—and, rather surprisingly, a very low efficiency for very high velocities.

As regards the matter of what I have called anthropomorphism in deriving and defining laws of nature, I would like to append some remarks of P. W. Bridgman in "The Nature of Thermodynamics":

> It must be admitted, I think, that the laws of thermodynamics have a different feel from most of the other laws of the physicist. There is something more palpably verbal about them—they smell more of their human origin. The guiding motif is strange to most of physics: namely, a capitalizing of the universal failure of human beings to construct perpetual motion machines of either the first or the second kind. Why should we expect Nature to be interested either positively or negatively in the purposes of human beings, particularly purposes of such an unblushingly economic tinge? Or why should we expect that a formulation of regularities which we observe when we try to achieve these purposes should have a significance wider than the reach of the purposes themselves?

The fact remains that they do. But this is no guarantee that such a procedure is always going to work.

Before I close, I should like to call your readers' attention to a recent issue of *Harper's*. In it there are two articles covering topics frequently discussed in your editorials. In one, Pete Drucker describes the emergence of a new philosophy, which, we may hope, will enable science better to handle problems—especially in the "humanic" fields, but to a certain extent in the physical sciences also, which really will not yield to the methods and underlying philosophy of the last three centuries. The villain of the piece is not, as one might think, Aristotle, but rather René Descartes. The new philosophy, for example, does not look so much at an atom to be explained in terms of its particles, or an organism in terms of its organs, or a culture in terms of its individuals, but the reverse; the whole is not the sum of its parts, but the parts are what they

are only because of their relation to the whole.

The other article is a review of a book, "Uncommon People," by Paul Bloomfield regarding the leadership of England, which has been recruited, in great part, during the past four centuries or so, from the members of a few eugenically superior families. Chief among them is George Villiers, whose descendants include the current sovereign and Sir Winston Churchill, but the complete list of them is something to behold. The reviewer assigns Villiers a position among human beings on a par with Man O' War among equines. He also details several traits which seem to be characteristic of these superior individuals: (1) Intelligence, (2) Energy, (3) Ruthlessness, (4) Charm, (5) Responsibility. It might be useful to consider these traits as survival values. (1, 2, 3) are definitely pro-survival to the individual; he can know what he needs to survive, work hard to get it, and ignore all obstacles. But (3) will tend to unpleasant repercussions from society, which he will need (4) to cope with. Finally, in (5) we have that which makes the individual so superb a means of gaining the ends he chooses being turned into an instrument not for his own survival, but that of society and the human race.—Harry W. Hickey.

You might try, sometime, allocating the exact part true ruthlessness plays in genuine and deep kindness, too!

Dear Mr. Campbell:

I have been a science-fiction fan for years now, although I have a very poor scientific background. Luckily, in SF there are very few stories which make an understanding of scientific principles necessary for the enjoyment of the story. But one term which is rather loosely thrown about in some SF yarns has aroused my curiosity. What—in terms an art major can comprehend—is a force field? How is it turned on and off? What happens when it disintegrates, as was once pictured on the cover of another fine SF magazine? Can anything penetrate it, vibrations, for instance, or light? What happens when something tries to penetrate it?

I have gone to the usual sources, Encyclopedias, et cetera, but to no avail. Brass Tacks seemed a natural, and a last resort. I read the column avidly every month, hoping to lighten my scientific darkness a little, and though I am always at a loss on little problems such as Plummer's brain teasers, I enjoy reading other people's answers. I realize that my question must be either much more elementary, or much more difficult than I imagine it to be, but I hope you can take time to recommend a source for the answer, or give an explanation yourself, if possible. Thank you very much.—Martha Kay Renfroe, 4620 Harvey Parkway, Oklahoma City, Oklahoma.

Anybody want to take the definition of "force field" out of the "Well

. . . you know what I mean, of course . . ." class?

Dear John:

As a veteran anasophile, who was raising ducks before I was twelve, I have a couple of wishbones to pick with David Gordon. Is it true, as was rumored in Cincinnati, that he now *looks* like a duck?

Of course, the man has a sneaky sort of out if he descends to using it. What a few generations of obsessed biologists may do to that most adaptable of fowl, not even Gordon can fully imagine. But—unless that gay strain got mixed in somewhere—is it likely that future ducks will look like *drakes?* I'll grant Freas the right to a pictorial pun on page 69, where Dumbrowski confronts Drake, but that waddler that made her lovably inquisitive way into the control room of the *Constanza* was maybe crazy and certainly mixed up, but by no stretch of the imagination a male! Freas should take his brood to the zoo more often.

I also take issue with the claim that—at the tender age represented—brooder-sized ducklings would be doing any "*Wakwakwaking.*" Maybe it's their muddled heredity that's turned them all to basses, but any such junior-grade puddler I ever met would be *Weekweekweeking,* but shrilly. Wassamatter—the guy got a tin ear? (Incidentally, I ignore the contention of Peterson, Mountfort and Hollom that the drake gives with "a quiet *yeeb.*" I ask you, is it likely?)

My very good opinion of this author's eye for a quick yak is somewhat shaken by the way in which he has totally neglected the possibilities of that hideous stage of incipient adolescence when the duckling sheds his down and goes around for days in a state of repulsive nudity, all beak and feet, like a peeled pink protopteran, splotched with moldy-looking tufts of unshed down and spiked with developing pin-feathers like stray stubs of minute blue asparagus.

I must also insist that not only Drake, but every man of that heroic crew, would have been automatically adopted as a Mama. Believe me, man, ducklings can generalize at a *very* tender age and they know Man from man, and can include woman without batting an eye. Those five thousand ducks would by no means have scattered among the lakes and streams of Okeefenokee—they'd have moved right into town with the eighty ecologists. After all, they'd been brought up as people. (Sequel?)

Apart from these minor considerations, pointed out in the interests of accuracy and in no carping spirit, I applaud Mr. Gordon's immortalization of Man's truest feathered friend, that noblest of fowls and poet of the swamplands, suave, intelligent, faithful, and with applesauce served. And I suppose I must reluctantly allow him the license of his craft and mood.

"Somewhere a drake yeebed." Gah!—P. Schuyler Miller.

Yipe!?

Dear Mr. Campbell:

My An Lab ratings for the September '57 issue are:

1. Look Out! Duck! David Gordon
2. The Devil, You Say? W. L. Kleine
3. Red Rover Dean C. Ing
4. Citizen of the Galaxy (I) R. A. Heinlein
5. Into Your Tent I'll Creep E. F. Russell

It will be a close race between Messrs. Gordon and Kleine.

I have been experimenting on Psionics, and have come up with definitely interesting results. Your Symbolic Machine looked, to me, very much like an oscillator with capacitive feedback, the amount of said feedback being controlled by the variable electrode arrangement. With that idea, I designed an amplifier in symbolic form, the amplification and the tuning of the amplifier being controlled by the everpresent variable electrode. Connecting the in-put and out-put sections of the amplifier to headbands of paper with two threads each, and having drawn-on "coils" on the headbands, I tested two friends with random series of numbers. I found that a definite increase in the percentage of correct guesses occurred when the right angle of the triangular electrode was pointing in the direction of the second or "output" tube in the electrode.

Although insufficient trials were made to completely rule out the idea of pure chance, an increase of from ten per cent of the numbers correct to eighteen per cent correct, using ten numbers in about eight hundred trials, is my idea of a significant increase.

Keep on with the good work.—Kenneth Rachels, 334 S.E. 42, Oklahoma City, Oklahoma.

The problem of psionics experiments, I think, is that it opens too darned many possible pathways. My hunch is that we'd do better to try to find something of the basic functional nature of ONE device, reduced to the simplest possible terms, with the fewest possible variables. Random numbers guessing may be significant indeed . . . but there are too many variables to trace cause-effect relationships.

THE END

(*Continued from page* 7)

So we had the resources, and could have done it, if we'd just . . .

If a man doesn't have the ability, and, therefore, doesn't do something, that's understandable. It's a different question when he has the abilities . . . but can't seem to use them. Something is gumming up the works in United States research and development—and it seems highly desirable, at this point, to get the gum, whatever it is, the hell out of the works.

May I suggest that the major problem may have to do with Traditions?

After WWI, the Allied Powers stripped Germany of military power. The German Army and Navy were reduced to token forces, the entire organization smashed, and the Armed Services of Germany made ridiculous. They stayed that way, too; they never did get their power back. Hitler, not the military officers, made it possible for Germany to rearm. The traditions of the German military system were pretty thoroughly knocked out; seniority in the service didn't mean much—what Hitler said did. There was no German Air Force; Hitler created that.

What the Wehrmacht and the Luftwaffe did to France's traditionally fine Army and Air Force, and to the mighty defenses of the Maginot line, was pure slaughter. Completely unexpected and drastically efficient tactics demolished France's defenses in a matter of days; the British forces in Europe at the time were chewed up and spit out sidewise more or less incidentally.

After WWII, the Allied Powers again stripped Germany. But this time, less attention was paid to the military power, than to the German industrial combines that had been the source of Hitler's strength. The cartels, industrial organizations, and machine tools were smashed, demolished, or hauled away to the victor powers.

Hitler never did succeed in making Germany economically successful; since the industrialists were the backbone of his power, he couldn't change them much. The Allied Powers did, however; they smashed them to shreds, broke up the entire tradition of German economic organization.

West Germany is currently enjoying the largest gold reserve in Europe, an unsurpassed economic boom, and a success in world markets that Hitler once dreamed of and couldn't achieve.

Germany is now enjoying one of the results of an economic system the United States worked out some years back—competitive capitalism. The Russians keep talking about "monopolist capitalists"; that's the kind Europe has been familiar with, and that the United States hasn't had. The Allied Powers, after WWII, so thoroughly smashed the German monopolist capitalist system of cartels that they did for Germany what Germany had not been able to

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do for herself. The traditions were smashed.

The United States hasn't had much in the way of traditions; you can't establish them very well when growth, and opening of new frontiers, keeps changing things so fast that before a method can become traditional, the situation has changed out of recognition. It takes stability and security to permit traditions to grow; once established, of course, they rapidly stabilize the system and tend to secure the situation as it is.

Up to about 1910 there were far too few professionally trained engineers, technicians, or any other type of professional man to meet the needs of the nation; most of the men working in the fields were without degrees, and even without high school diplomas. They'd learned their business by apprenticeship; the test of a man was whether he could *do*, not whether he had the right official papers.

In such a situation, brilliant, unorthodox men can advance as rapidly as their actual competence permits. Seniority means very little; accomplishment counts. In many ways that's a costly system, because the risks are high—but the history of the United States indicates that the rewards can be high, too. Some men invested in the strange ideas of Henry Ford—and some invested in other strange ideas you can't find

any more. Some backed the impossible sounding idea of Alexander Graham Bell, and others bet that electric battery powered automobiles would sweep the world.

There wasn't much sound, carefully formulated science—too few professionally trained scientists to raise their voices. Too few traditions of professional standards.

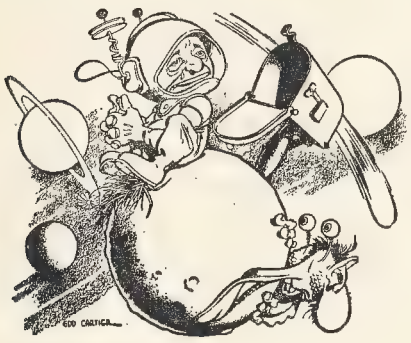
Now, of course, we do have traditions, and standards of scientific training. Also scientific ethics. A physicist wouldn't try to solve a medical problem; it's contrary to scientific professional ethics; only doctors are permitted to solve medical problems. (Pasteur was a chemist.) If a professional in one field puts forward an idea in another field, he is first snubbed soundly for being so impolite—and then he is publicly brushed off with the statement that, after all, it takes many years of professional training to understand the complex problems in this field, and it's really rather silly of him to try to introduce something in a field he knows nothing about.

If that doesn't adequately discourage him, it does discourage others from trying to start in the same impolite direction.

America has, in the last fifty years, established a tremendous tradition of technological achievement.

Russia, now, is in about the same cultural position the United States was fifty years ago; they're just discovering their national strength, and the bright and wonderful possibilities of technology. They're highly unprofessional, they have no traditions, and they make some foolish investments such as the Lysenko business. They attack technology with the gusto and enthusiasm of a new discovery—and they have too few old-line professionally educated men to establish any professionalism.

The United States has one of the most deadly dangerous of all problems facing it; if we cannot solve the problem of breaking down the creeping rigidity of traditionalism by some internal mechanism—and no people on Earth, in all history, has ever done it by any means other than violent revolution!—then it will be broken down by external pressures.



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Germany's too-rigid, tradition-stiffened military system was broken down by the Allied Powers in 1919; thanks to that assist from outside, the Wehrmacht of 1939 shattered France, as the Kaiser's armies had signally failed to.

Hitler couldn't break the industrial combine traditions; the Allied Powers fixed that in 1946. As of 1957, France and England wish they hadn't.

A tradition-stabilized system gives the individual citizen a degree of security he cannot achieve in a fluid situation—but only by making the culture too rigid to meet new problems. Individual security is increased by a seniority-promotion system; cultural achievement increases when there is an ability-based promotion—*and demotion!*—system.

The Russians are, shall we say, a bit over-emphatic in their demotion methods; it's been some while since Americans demoted a man by running him out of town on a rail, or expressed their disapproval by tar-and-feathering, or that old American tradition, the "necktie party."

The Russian Satellite could be of immense importance to America; it could serve to stimulate a study of what's gumming up the works in American technological progress. If we could only find a method of promoting men on a basis of number of creative ideas, instead of number of years of not-getting-fired, and then find a method of installing that method without a revolution, it would be a sociological triumph beside which all technical triumphs would be puny indeed.

Seniority—sheer staying alive—was the standard method of selecting higher executives in primitive tribal days. The Elders ruled the tribe. It was a pretty sound system, too . . . in those days. A man *had* to be smart, mentally agile, wise, and physically fit to stay alive at all for fifty years in those days; the fact that he was still alive after fifty years of everything and everybody trying to kill him proved he was abnormally competent. Normally competent men died suddenly in their twenties or thirties.

But one of the best ways to stay on the payroll for many years in modern America is to carefully avoid

causing anybody above you any trouble at all.

Tell them they're making a major error—particularly when it's painfully true—and you get fired, quick, as my rocket engineer friend found. Push hard on an unorthodox and disturbing idea, and you're almost certain to irritate people.

Admittedly, it's nice to be able to plan your future and know that things will be stable, secure, and present only those familiar problems you have trained yourself to handle. One of the major reasons there is such a strong drive in men to establish a single world culture is that then one, strong, stable, secure system, free of the threat of someone upsetting the stable, predictable world, could exist.

Seniority, professionalism, traditionalism all act to smother the unorthodox thinker, and to block the creative thinker.

Psychological studies, time after time, have shown that the age period of maximum creativity is between about twenty and thirty-five. Organizational ability rises between thirty and fifty. But in a system of seniority-professionalism, the younger group aren't entrusted with originating new projects; older and more experienced men decide which ideas shall be pursued.

The United States naturally has a great over-all lead in technology; we have the capital of industrial equipment we have built up over the last half-century. There's no question about the immense potential of American technology.

But something quite clearly is wrong; with all those great advantages . . . the younger, cruder, less developed Russian technology *did* what we had so deeply hoped to do, what we have talked and dreamed about for years in science fiction, what the United States has officially talked about.

It can never be Project Vanguard now. Make it Project Me-Too; that's all it can ever be now.

We wanted to be the ones to put Mankind into Space.

Sorry we didn't make it—but thanks, Ivan! It's a damned fine job; Man has been able to peek out at last!

THE EDITOR.

"Demonstration—Part II," scheduled for this month, has, for evident reasons, been held over. The Russian demonstration is, clearly, more effective than anything that could have been written, in indicating that something is seriously wrong with current concepts of how-to-learn in American science.

"Demonstration" resumes next issue—news events permitting!

In the channel fog

HER ENGINE FALTERED

A few minutes out of Dover, fog wrapped the flimsy Bleriot monoplane like a shroud.

The pretty young woman in the smart flying costume (she'd designed it herself—"bloomers, blouse, and hood of mauve satin") glanced at her compass. It was the first time she'd ever used one. She thought of instructor Hamel's parting words:

"Be sure to keep on course, Miss Quimby, for if you get five miles out of the way, you'll be over the North Sea, and you know what that means."

She climbed to 6,000 feet. Freezing cold and still fog.

She pointed her nose down. The comforting clatter of the Gnome engine changed to a coughing splutter. It was conking out! She leveled off, figuring how she'd ditch. To her relief, the engine suddenly took hold. Harriet re-checked her compass.

Some time later, breaking into clear sky, she saw a stretch of beach below. She put down at Hardelot; and on April 16, 1912, Harriet Quimby, first American woman to earn a pilot's license, became the first woman in the world to fly the English Channel.

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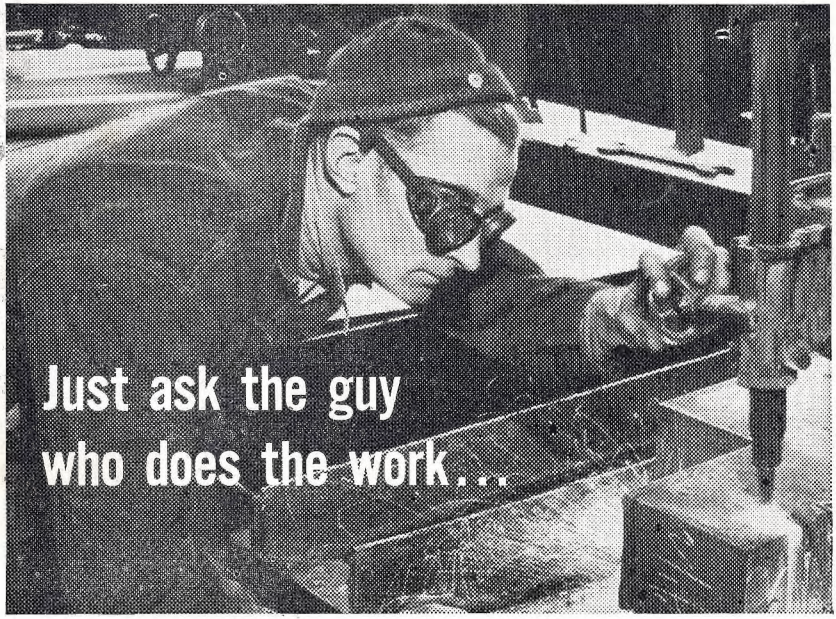

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